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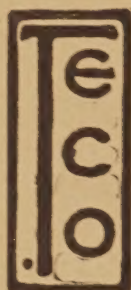
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THE BRICKBUILDER.

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THE BRICKBUILDER.

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WILSON EYRE, CHARLES C. HAIGHT, NEWMAN & HARRIS,
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PULPIT IN THE CATHEDRAL AT COIMBRA, PORTUGAL.

THE BRICKBUILDER

VOL. 14 No. 1 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY JANUARY 1905

THE BRICKBUILDER.

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Results of the Church Competition.

THE jury for the Church Competition has awarded First Prize (\$500) to Addison B. Le Boutillier, 9 Acorn Street, Boston, Mass.; Second Prize (\$200) to Aymar Embury, 2d, Englewood, N. J.; Third Prize (\$100) to E. Donald Robb, 170 Fifth Avenue, New York City. Mention was given designs submitted by the following named: Gordon Allen and Frank E. Cleveland (associated), Boston; M. H. Smith, Boston; Harold W. Hathaway and William S. Wells (associated), Boston; William L. Welton, New York City; Russell Eason Hart, New York City; August Sieder, Jr., New York City; Robert Fockens, Boston.

THE PRIZE WINNERS.



MR. ADDISON B. LE BOUTILLIER.

ADDISON B. LE BOUTILLIER is thirty-two years old, a resident of Boston. Began his architectural training in the office of O. K. Foote, Rochester, N. Y., in 1891. Was afterwards in the office of S. S. Beman, Chicago, and Shepley, Rutan & Coolidge, Boston. Began practice for himself in 1894 in Boston, and has continued it ever since, with excep-



MR. AYMAR EMBURY, 2D.

tion of six months spent in study and travel in Italy and France during 1896. For the past three years Mr. Le Boutillier has given part of his time to The Grueby Faience Company as designer.

AYMAR EMBURY, 2d, is twenty-four years old, a resident of Englewood, N. J. Was graduated from Princeton University with the degree of civil engineer in 1900, was given the University fellowship in Archaeol-

ogy, and obtained the degree of Master of Science in 1901. Since leaving college he has worked in various offices, where his architectural education was obtained. Mr. Embury is instructor in architecture at Princeton this year.

E. DONALD ROBB is twenty-five years old, a resident of New York City. Was graduated in 1899 from Drexel Institute, Philadelphia. His early training was received in the offices of T. P. Chandler, Cope & Stewardson and Arthur H. Brockie of Philadelphia. At the present time Mr. Robb is connected with the New York office of Cram, Goodhue & Ferguson.



MR. E. DONALD ROBB.

THE AMERICAN INSTITUTE BANQUET.

THERE was a time not very long ago when the conventions of the American Institute of Architects were pretty dry, uninteresting affairs, which attracted almost no attention outside the profession and very little inside. But after such an affair as the banquet held in Washington at the last convention, it will behoove the managers of the Institute to continue the work therein begun of bringing the profession and the intelligent, educated public more closely in touch. If these annual conventions were simply to serve the purpose of a junket on the part of the delegates, with a number of technical papers thrown in, neither the profession nor the public would be much the gainer thereby. Certainly no other profession has such a claim on the interest and attention of those whom we call the leaders in all departments of literature, science and government as has architecture, and the conservative spirit which is so marked a feature of professional practice, while most excellent in its way, must give place to the progressive, broad-minded view which has animated the last convention and which has found so marked an expression in the assembly of such illustrious guests at the dinner. Such an event, developed in such a manner, means the best sort of progression. We need never fear that the profession will abandon any considerable portion of its conservative spirit and we should hope it never would, but we do need to get out from among ourselves, to let others see how we regard our work, and to give the busy men who control the affairs of this nation an opportunity to become acquainted with the points of view, the objects which are so dear to the heart of the architect. It remains to be seen what the next convention can do to keep up the procession, but it will be pretty hard to devise an evening more thoroughly enjoyable and valuable to all associated therewith than was the evening of the dinner at Washington.

A MEDAL OF HONOR.

THE New York Chapter of the American Institute of Architects has established a Medal of Honor for award to designers of buildings represented in the annual exhibitions of the Architectural League of New York, under conditions which ought to make this medal a very marked honor to its recipient. The choice is limited to any architectural work in any portion of the United States completed within five years previous to the date of exhibit, and in order to be eligible to the award the architect or architects must present for exhibition one or more photographs of executed work, also one or more drawings, including a small scale plan; and they must further submit to the jury such working drawings of the structure as they may desire to examine.

This action of the New York Chapter is a highly commendable one in many respects. It brings the League and the Chapter into a more cordial relationship, and will undoubtedly be the means of securing a larger and better exhibition of architectural work. Whether it really brings out the best work the country produces remains to be seen. Architects are generally more prone to exhibit drawings of proposed rather than executed work, and the constant trouble with past exhibitions has been they

included so many schemes and so relatively few of the most prominent buildings actually constructed. If the choice is a wise one it ought to go a long ways towards making the League exhibitions of greatly enhanced value. These exhibitions theoretically draw from all over the country, but they are practically limited almost entirely to the work of New York architects, and it may very well prove that the offering of this medal may have the effect of greatly increasing the contributions to the exhibition from outside of the city. Another effect of the offering of this medal may also, we hope, be to incite chapters in other cities to follow a similar procedure. A recognition of the work of the profession is always fitting, and it comes with a special grace for one of the oldest chapters of the Institute to offer this medal through the intermediary of the League.

DOING HIS BEST.

THERE are two causes which operate against the best architecture. One is the indifference of the client to artistic possibilities or requirements, and the other is the inertia or indifference of the architect himself in the busy world which stands for architectural practice to-day. The temptation is ever present to get work out of the way, get it accomplished, anything, almost, to have things done, and while the spur of necessity is sometimes an incentive for a man to do his best, it is also very often an excuse for him to quite fail of reaching his ideals. There are a few architects in this world who seem always to be putting their best efforts to the front, who seem so constituted that they can withstand the pressure of business and can take every problem, great or small, and treat it in the very best possible manner, doing always something that is interesting, always something that is worth studying. To mention only a few as types, the late H. H. Richardson was one; among our contemporaries, the English architect Lutyens is another; and there are others in this country we all know and whose work is invariably interesting, whether large or small, and whose artistic judgment commands the respect of every one. It is not wholly a question of natural endowment or education. Some of our most brilliant architects will repeatedly allow themselves to do work which they know is not worthy, nor studied, nor in which they can take any pride; but if we could all in our New-Year's resolves include a determination to at least try to let nothing go from our office which is not worthy, to never let ourselves become commonplace, to always think and show our thinking in our work, there would come very speedily a tremendous improvement in the quality of our national architecture. As a matter of fact, we generally do not use our best efforts. We become weary of trying to educate a client. The drudgery of office practice dulls the sharp edge of our artistic desires, or financial considerations compel us to treat our buildings as a manufacturer would treat his products, and bring them out as speedily as possible. We know better, and some day more of us will do better. For the present we can only be thankful for the saving leaven of the few who will not be hurried, who insist upon taking thought, and whose work shows in every line how fully their aspirations are reflected in the personality of their work.

Convention of the American Institute of Architects.

THE Thirty-eighth Annual Convention of the American Institute of Architects, held in Washington, January 11, 12 and 13, was in some respects the most remarkable assemblage of its kind this country has ever seen. It has come to be almost a truism that the people at large do not appreciate the standpoint of the architect nor understand his professional status, but this convention will go a long way towards advancing the position of the architect in the eyes of public men and of placing him in a category which is as gratifying as it is in some ways unexpected. On the evening of January 11 there was held in the large dining hall of the Arlington Hotel a dinner, which, by reason of the character of its guests, and also because of the after-dinner speeches which were there presented, will be almost epoch making and is certainly epoch marking.

The Arlington is not a magnificent specimen of architecture, and in its normal condition the dining hall is thoroughly uninteresting, but under the artistic direction of F. D. Millet the room was transformed. Ordinarily it presents an ugly walnut dado, with commonplace windows on the sides between broad, low pilasters. Mr. Millet covered the pilasters with plain surfaces of soft cream-colored cheese cloth. Upon each was arranged crossed palm branches behind simple escutcheons of bronze, bearing the names of the chapters. The spaces between the pilasters were covered with cheese cloth in regular, long vertical pleats, entirely concealing the windows. Above the windows a broad frieze of plain cheese cloth was carried entirely around the room to serve as a background for large swags of laurel, held at intervals by bronze escutcheons bearing the names of the states. Behind the President's seat were trophies of American flags and the name of the Institute, and each side of the ordinarily hideous mantelpiece, now entirely concealed by the decoration, were disposed groups of state flags in white, blue and gold. Just the right artistic touch was given to the whole decoration, and the effect was exceedingly satisfactory. But it was in the character of the guests and the speech making that this dinner excelled. President Roosevelt, the French Ambassador, Secretary Hay, Secretary Taft, Justice Harlan, Cardinal Gibbons, Bishop Satterlee, Senators Newlands, Aldrich, Nelson, Allison, Wetmore, Cockrell and Dryden, Hon. Elihu Root, Hon. Whitelaw Reid, J. Pierpont Morgan, President A. J. Cassatt, Lieutenant-General Chaffee, Augustus St. Gaudens, John La Farge, Dr. Nicholas Murray Butler, Henry Walters, Hon. S. P. Langley, E. H. Blashfield, Prof. Edward McDonald, Prof. Simon Newcomb, Henry Siddons Mowbray, and a long list of the most eminent men in the country in diplomatic, artistic and literary circles, including also Charles Dana Gibson and Mr. Dooley, occupied the long raised table extending around three sides of the room, the balance of the floor space being occupied by separate tables at which were many men known throughout the country mingled with the delegates and visiting architects. It was an assembly which it would be hard to equal anywhere, and the fact that these gentlemen were glad to assist at the convention dinner and took such an active interest in the proceedings

of the evening shows, perhaps better than any other one thing that has happened for years, how enormously the standard of the profession has increased. President Roosevelt gave one of his characteristic speeches, which was listened to most attentively. There was no disposition to resort to oratory. It was simply an expression of what he intended to impress upon men who are engaged in professional and business lives, and he particularly emphasized the point that the only way in which we can hope to have worthy artistic work done is by having such a growth of popular sentiment as will render it incumbent upon successive administrations to carry out steadily a plan chosen by them and worked out by experts. The best thing that any administration or that any executive department of government can do is, in his judgment, to surrender all these matters, within reasonable limits, to the guidance of those who really do know what they are talking about. "There are things in a nation's life more important than beauty; but beauty is very important. And in this nation of ours, while there is very much in which we have succeeded marvellously, I do not think that if we looked dispassionately we will say that beauty has been exactly the strong point. It rests largely with gatherings such as this, with the note that is set by such men as those I am addressing to-night, to determine whether or not this shall be true of the future." The President's address was most warmly received. The balance of the toast list included the following:

"The Simple Life," Hon. Elihu Root.

"The Supreme Court of the United States," Justice Harlan.

"The House of Representatives," Representative James T. McCleary of Minnesota.

"The President," by W. S. Eames, president of the American Institute of Architects.

"The Painters," John La Farge.

"The Sculptors," Augustus St. Gaudens.

"The Place of Art in Civilization," Nicholas Murray Butler and his Excellency Jules Jusserand, French Ambassador.

"Art and Religion," Cardinal Gibbons.

A signal for very general manifestations of approval was given when Charles F. McKim announced that Mr. J. Pierpont Morgan and Mr. Henry Walters had each given \$100,000 to secure the purchase of a permanent abode for the American Academy in Rome. This enterprise, which has been dear to Mr. McKim's heart for so many years, and which has enlisted so large a share of his time and money, is now on a permanent footing and will undoubtedly become an important factor in our national art life.

The exercises of the evening were not concluded until nearly two o'clock, but not for a moment did it drag or was there any lack of the most absorbing interest. The Washington *Times*, in its editorial the next day, made the emphatic statement that "Congressmen who are wise will follow the proceedings of the thirty-eighth annual convention of the American Institute of Architects. No other body, not even Congress excepted, stands guard on the development of the capital with equal watchfulness; and no other body, Congress still not excepted, will leave so deep an impression upon the Washington of the future."

Of the routine business of the convention, the first day was given up almost entirely to reports and organization. During the first day session extremely interesting papers were presented by R. Clipston Sturgis of Boston and William B. Mundie of Chicago, on the relations of architects with municipal school work. These two papers were in excellent contrast. In Boston we have passed through the stage of city architects having charge of all buildings, of specially appointed architects having charge of the work of the different departments, and have finally settled upon the plan of intrusting at least the schoolhouses entirely to a special commission. How thoroughly well this plan has worked is known to many of our readers, and will be further presented in detail during the coming year in these columns. In Chicago, on the other hand, they appear to have carried the development no further than to intrust all the work of the school department to a single architect under the immediate direction of the Board of Education. The excellence of Mr. Mundie's work is unquestioned, and we are aware that the commission idea has not been so successfully applied elsewhere as in Boston; but we do believe Chicago will ultimately adopt a plan more nearly akin to what is now working so well in Boston. Additional discussion on this subject was to have been presented by a paper from Mr. Ittner of St. Louis, but he was not able to be present or to send his paper.

William H. Russell presented a *résumé* of the methods of financing large building operations, throwing a very interesting side light on a function of the architect which has existed for only a very few years, and his remarks illustrated how the sternly practical requirements, the remorseless necessity of considering every expenditure as an investment and measuring its worth by the returns in money which it will afford, have influenced design. The large commercial building has forced the architect to be more than an artist, and the urgency of the problems has brought about a natural selection of the types and methods which are most desirable. Mr. Russell suggests in our office buildings that we could use more color, more bright terra-cotta, though, as he truly put it, color had better not be suggested by an architect until he is sure he will be employed, for the average business man looks askance at anything but monotonies.

Grosvenor Atterbury of New York gave a most instructive account of the systematic methods which he has evolved in his practice and by the aid of which he keeps control of his business, his contracts and his office force. All of the printed forms which Mr. Atterbury uses so freely were illustrated by lantern slides, and it is rather to be regretted that a natural feeling of hesitation on the part of delegates should have prevented them from a very frank and free discussion of Mr. Atterbury's paper. Generally speaking, the architect is apt to be lacking in systematic business ability, but this is a department of office work regarding which there is such a diversity of opinion that a full discussion would have proven very profitable to many who were present.

The relations of specialists to architects were discussed by C. T. Purdy of Purdy & Henderson, engineers, and Edgar V. Seeler of Philadelphia.

Mr. Purdy naturally spoke entirely from the standpoint of the specialist, and in our judgment his paper ignored one very simple remedy for the troubles which are sometimes involved in the specialties which go to make up a large modern building. The remedy is the most natural one in the world, namely, to educate more thoroughly our architects. Mr. Seeler included other specialists than the engineer, and called forth an applause of the convention by his objection to the term "landscape architect" as applied to those who lay out the grounds and the planting around a house. Such a calling is not, strictly speaking, architecture, and is admittedly obscurely named, but we are inclined to doubt whether a better title is likely to be found. The modern landscapist is certainly not a gardener; he certainly also is not an architect; and he really has less to do often with the landscape, as such, than the architect himself. Mr. Seeler expressed our sentiments exactly in his statement that there is no reason except acknowledged ignorance on the part of the architect why the architect and the specialist should not work side by side in perfect harmony, provided of course that the dominant mind is the architect's; and the remedy for any clash between the architect and the specialist lies, first, in the more complete education of the architect; and, second, in untiring supervision of the specialist's details.

In the discussion which followed, Mr. Post was quoted as stating that the employment of engineers to collaborate with the architect presented no objections to his mind, provided, however, the drawings were actually made in the office of the architect, as only so could the building be systematically developed.

In the evening Frank Miles Day presented before a large gathering a very interesting report on municipal improvement, showing the progress made in systematic grouping of buildings and parks throughout the country. This lecture was very freely illustrated by lantern slides showing the magnificent stations which are under construction for the Pennsylvania Railroad and the Grand Central at New York, and for the Pennsylvania and Baltimore & Ohio at Washington; also showing the improved park systems, improved means of transportation, the group plan at Cleveland, and many other of the municipal activities in our large cities which have sprung up within the last few years and which show such a widespread interest in public improvements.

The session of Friday was rather sparsely attended, many of the delegates having gone home. It is to be regretted that the interest should not be kept up at full heat until the very end of the convention, as many important questions had perforce to be decided on a dwindling quorum.

The Institute voted, upon a recommendation of Mr. Day, to take up for consideration at the next convention the subject of municipal improvement of recent years in Europe. This ought to be an extremely fruitful field for our delegates. A motion was also carried accepting for the Institute membership in the National Fire Protective Association, with the appointment of one or more delegates to represent it in that body. The convention also appointed a delegate to represent it on the National Electrical Code.

The Institute greatly enlarged this year its list of elections to honorary and associate membership extended to foreign architects of distinction. Mr. Ricardo Valázquez y Bosco, the president of the 1904 congress at Madrid, was elected to honorary membership. Mr. José Urioste y Velada, Mr. Enrique Repullés y Vargas, and Mr. Luis Cabello y Lapiedra were elected to associate membership. These names were presented by Mr. Hornblower, who also illustrated by means of the lantern some of the work by each of the architects. Mr. Day then presented the following English architects, showing the work of each with an admirable set of lantern slides: Richard Phene Spiers, honorary membership; Edwin L. Lutyens, corresponding membership; George Frederick Bodley, honorary membership. The Institute, upon presentation by W. A. Boring, also elected M. Daumet to honorary membership, and Gaston F. Redon and Henri Deglane to corresponding membership.

While the names of foreign members were being considered the delegates were balloting upon officers for the coming year, who were elected as follows: President, W. S. Eames, 1st Vice-President, Alfred Stone; 2d Vice-President, Cass Gilbert; Secretary and Treasurer, Glenn Brown; Directors, W. A. Boring, J. M. Donaldson, F. M. Day; Auditors, Robert Stead, J. G. Hill.

The following were also elected as Fellows of the Institute upon nomination of the Board of Directors: Grosvenor Atterbury, Henry F. Bigelow, Alfred B. Harlow, Irving K. Pond, C. B. J. Snyder.

At this convention the Institute made two modifications of the by-laws: the first increased the annual dues of Associates from \$5.00 to \$7.50, and of Fellows from \$10.00 to \$15.00. The necessity of this increase was partly to enable the Institute to carry out the work which has been assigned to it by successive conventions, and also to enable it to meet its obligations on the purchase of the Octagon House, Washington. The second change in the by-laws was aimed to do away with the present rather clumsy method of voting for membership in the Institute, under which the names of parties proposed are submitted for letter ballot to all members of the Institute from Maine to Manila. Under the revised by-law the member is balloted upon only by the chapter to which he belongs. If he is passed by the chapter, the Institute then sends his name to the various members throughout the country for comment, and the actual election is later by the Board of Directors. This means that practically the chapters elect the members of the Institute, a proceeding which is more in harmony with the delegate character of the Institute and one which will greatly lessen the machinery of election and give the individual chapters a larger voice in the selection of members.

The Institute was invited to hold its next meeting at Los Angeles, California, but no final vote was taken on the matter, it being left in the hands of the Board of Directors.

The convention was very largely attended, there being considerably over a hundred present. The delegates voting numbered something over eighty, and there was a sustained interest shown in the proceedings which was most encouraging to all who have the growth of the Institute at heart.

THE remarks of Mr. Frank Miles Day introducing and explaining the work of the English architects presented for honorary and corresponding membership in the American Institute of Architects will be of interest to our readers. The names of all these gentlemen are familiar to architects in this country, but we have not had full opportunity to appreciate as fully the character of their work as is shown by Mr. Day's well chosen words.

For honorary membership, Richard Phene Spiers, architect, Master of the Architectural School of the Royal Academy of Arts; Fellow of the Royal Institute of British Architects; Past President of the Architectural Association, London, and member of many learned societies; Gold Medalist, and Traveling Student of the Royal Academy of Arts; Soane Medalist and Traveling Student of the Royal Institute of British Architects; editor of a new edition of Ferguson's "History of Architecture," and author of many works on architecture and archaeology, not alone because his attainments have qualified him for that honorable distinction, but because he has acted as friend and adviser of many students, now members of this Institute, giving them kindly welcome, hearty sympathy and wise counsel.

For corresponding membership, Mr. Edwin L. Lutyens, architect, because in that fascinating yet difficult art of domestic architecture, in which the English hold so distinguished a place, Mr. Lutyens has, by the strong individuality of his design and the high qualities of his style, established for himself an unquestioned position among those who stand highest.

Choosing at random illustrations from the abundance of his work, we note at once the singular sympathy between the buildings and their surroundings. Even with the good fortune of having for client a man whose hobby is rose growing and wall gardening and building for him a house near a quiet English village, it takes a master hand to reach a result so filled with peace and contentment as in the Deanery at Sonning on Thames.

Strongly individual and little reminiscent, as parts of the house are of English precedent, there is nothing wilful in the apparent break with that precedent, but something that shows a constant striving for excellence rather than novelty.

But if in some cases Lutyens shows great freedom of treatment, he has in general a thorough knowledge of and marked respect for "the well-defined way of building of the country." For in England "every part of the country has its own traditional ways, and if these have in the course of many centuries become crystallized into any particular form, we may be sure that there is some good reason for it."

Of this respect for old methods, the house of Miss Gertrude Jekyll is a good example. She herself says of it that "It is designed and built in the honest spirit of old days, and the body of it, so fashioned and reared, has, as it were, taken to itself the soul of a more ancient dwelling place." The house is not in any way a copy of any old building, though it embodies the general characteristics of the older structures of its own district.

Because of the sustained interest of his work, because of its freshness joined with its respect for tradition, because of its sanity in the use of materials, but

most of all because of its high qualities of style, the Board commends for election, Edwin L. Lutyens.

For honorary membership, George Frederick Bodley, Fellow of the Royal Academy of Arts and Gold Medalist of the Royal Institute of British Architects, because to him more than to any other man is due the change that came over English ecclesiastical and collegiate architecture in the last quarter of the nineteenth century, a change from the uninspired manner of the revived Gothic to a manner marked with the impress of our own times and of the personalities of the men who work in it, a Gothic not merely revived but revived.

Mr. Bodley was Sir Gilbert Scott's first pupil. He served an old-fashioned five years' apprenticeship, lodging in his master's house. He was launched on the topmost tide of the Gothic revival. Drilled in the rigid convention of English Gothic, Mr. Bodley not unnaturally began his independent career with a revolt which led him to designing his first church in the utmost severity of form and detail and in an early French manner.

Within the next few years Mr. Bodley, in the fresh vigor of his young enthusiasm, was constantly and happily busy with new churches, and of these St. Martin's at Scarborough is one of the most interesting, not only for its intrinsic beauty and distinction, but for the fact that the architect here found a field in the decorative accessories for the co-operation of his friends and fellowenthusiasts, Rossetti, Madox Brown and William Morris.

In 1869 or even earlier Mr. Bodley began to work with Mr. Thomas Garner, an association that lasted for more than thirty years. There was never a deed of partnership or any legal form. Nothing could have been less commercial in character than the partnership which bore this conjunction of names, for it would be impossible to find two artists more absolutely divested of commercial habit or instinct than George Frederick Bodley or Thomas Garner.

As both men were strong designers and worked conjointly in designing many of their buildings, it is often difficult to distinguish their work.

In the innumerable opportunities that have fallen to Mr. Bodley's lot of repairing and adorning ancient buildings he has ever shown the most careful and tender solicitude for the preservation and expression of their intrinsic beauty and historic significance, and of the picturesque accretions of time, accident and traditional craftsmanship. Of this the old village church of Hickleton near Doncaster is an example.

For the last thirty years Mr. Bodley's Gothic has always been, in so far as constructive detail is concerned, in the "decorated" manner, but that manner has been so intensely perceived and assimilated as to become a natural, almost intuitive expression. His strong individuality shines through his adoptive fourteenth century as Wren's shone through his adoptive Palladian style.

As an example of the beauty of the detail of much of Mr. Bodley's work, the paneling of the new tower of Christ Church College, Oxford, may be presented. Decorative emphasis is given to the ancient portal below by the enriched paneling and triple niches, with statues of the founder, Cardinal Wolsey, and of two angels, which are placed above it.

Ecclesiastical Architecture.

BY REV. WILLIAM FREDERIC FABER.

IS THE BRICKBUILDER aware that it is a dangerous thing to invite these clerical opinions upon ecclesiastical architecture? A recent German writer * calls attention to "an abuse which has made itself distinctly felt in England in the last fifty years." This, he tells us, "is the disposition of the clergy to encroach upon the purely architectural, particularly the æsthetic and stylistic, side of the question. . . . These encroachments of the clergy upon the peculiarly architectural and artistic domain have proven themselves uncommonly hampering in England."

Are our own architects now voluntarily to open the door to this "clerical encroachment" here?

But, seriously, there is nothing to fear. If the clergyman be, in matters architectural, only a layman — which he appreciates — it may be added that it is quite American to invite lay opinion and co-operation, and to expect only good from it.

On this occasion particularly may we not assume a common ground with the architects? This series of papers, we take it, is evidence of the fact that some of the clergy are understood to have at heart, quite as deeply as any of themselves, the elevation of ecclesiastical architecture; and that some of the architects, as well as some of us, are willing to be understood to be, to put it mildly, not satisfied with the architecture we possess. We are not saying who is responsible for what they and we deplore: whether architects, for designing us churches of which few are good, many bad, many even atrocious; or whether building committees (with them clergymen), for being so depraved as to get out of their architects, not the best they could produce, but the worst. We simply state the fact: our American church architecture is deplorable.

It is chaotic. In our cities, conspicuously in those of greatest wealth and boasted culture, may be seen not simply churches to represent every known style; but worse, scarcely one church decently consistent with itself in that style which it affects. Concede, only for the sake of argument, the analogy that one man has as much right to talk French, another German, as the rest of us to talk English; what we ask then is, let each speak his own tongue correctly. Do not expect us to be pleased with German-English or with English-French! Is there such a thing as grammar? Can there be a literature of the illiterate?

We say again, that our churches, with rare exceptions, lack dignity and distinction. How many churches are there in any city that, considering what they purport to be, will bear comparison with the commercial, the domestic, the civic buildings erected and used by the same people? How many that compel the reverent at-

* Hermann Muthesius, *Die Neuere Kirchliche Baukunst in England*, Berlin, 1901. This, in spite of the author's pronounced anti-Anglican bias, is altogether the best account we know of, of the great English movement of the past century, and deserves translation.

tention of a passer-by, and by their witness of the Divine Majesty invite.

"that stoop of the soul which, in bending, upraises it too"?

How many churches that will bear repeated visiting and scrutiny and receive increasing homage as our capacity to appreciate noble art increases; or, if but humble and plain, command the tribute of respect we gladly pay to what is sincerely conceived and honestly executed?

And this brings us to the most vital point of all: the insincerity with which our architecture is cursed. How many churches do you know in which there is not something of sham and pretence, side by side perhaps with what is genuine and costly; something to forgive, when one would rather admire; something of which the mere thought is pain and grief to the true architect as to the minister of God? We refer not to that imperfection which may yet offer touching proof that men strove honestly to give their best; but to the melancholy evidences of that Ananias-like striving of men to appear to have given better than they really did. Such things are an outward and visible sign of an inward and spiritual disgrace.

Yet, architect and minister, one or both, have in almost every case had some hand in these futilities, these blunders, these atrocities; some share, if but by permission or concession and not by actual instigation or authorship. That reproach, though we personally may be measurably free from it, rests upon us both: upon the clerical order and upon the architectural profession. Let us then labor together to remove it!

There is but one way, and it is perfectly open to us. Education! The people must be taught. What architects and clergy will consent together to teach, the people will of necessity accept.

Education! But are we educated ourselves? I mean as to ecclesiastical architecture?

It is characteristic of our age to approach every subject by the methods of historical research and criticism; and science demands not merely the exploitation of this or that attractive province, not merely the accumulation of particulars, their minute description and classification, but the investigation of all accessible forms in every corner of the realm, their origin, their development, their determining heredity and environment, — in hackneyed phrase, their evolution. Will any one pretend that the architectural guides of the people know their ecclesiastical architecture in that way?

The first and absolutely indispensable step, then, is the study of the past, not that we may thereafter simply adopt and copy some chosen historic type, but that in some future better age we may be quite emancipated from mere copying and delivered alike from that fantastic crudeness on the one hand and that slavish timidity on the other which, like Scylla and Charybdis, await the uneducated who venture upon composition.

"But architecture is an art." Of course it is, but the history and principles of it form a science; this is our contention. With a mere fragmentary knowledge of that science it is as rash to undertake a great cathedral or church as it would be to attempt the composition of a symphony with the equipment of a fondness for music

and an understanding of the mandolin. We may build something big and with engineering skill make it hold together; but will it be the "frozen music" of the Old World?

Moreover, as an art, — nay, in its higher reaches as a science even, — he who would know church architecture must bring to it more than intellectual zest and technical grasp. Within that body dwells a spirit. It is characteristic that Mr. Holiday in his pioneer treatise on Stained Glass* and Mr. Cram in his excellent book on Church Building† both turn in the most natural way from scientific exposition to preaching Christianity, and appear unconscious of any digression. We may say that the "Symbolism" of old Durandus is trivial and foolish; but it is really far more foolish to expect a man who is devoid of the personal interest and devotion of the Christian and the churchman to teach or to design church architecture. Religious art surely cannot live and grow apart from religion.

But meanwhile we have churches to build and cannot wait for this long process of education. Very well; let us get, as best we can, at least a proper general idea for immediate use.

Why are we going to build this church? What purpose is it to serve? Manifestly the answer depends on who and what we are.

Are we Roman Catholics or Congregationalists? Or which of the scores of "denominations" is ours? After answering that, the next question may be, How much is it to cost? Where is it to be? But absolutely determining the essential things is this first question, and it ought to be.

Here are these "religious differences," whether we will or no; let us look at them fairly, without sentiment, without prejudice. Are they mere survivals of bygone controversies, lingering on because of the misplaced loyalty, perhaps pride, of their adherents, or do they stand for distinctions which are still vital, for positive convictions and principles, justified in going on till their work be fully done and they merge into some higher unity to which they shall contribute each its part? Let us get ourselves placed; let us understand ourselves.

Now, of course, no body of Christians will take that view of themselves which makes their very existence a state of sin; though a very few are beginning to think their separate mission accomplished, and are forming with others some larger groups — Christian reunion at least so far. The majority of the Christian bodies probably feel they still have a call to remain separate, but not forever.

What is all this to architecture? Everything; both for criticism of our past building, and for building hereafter. Truth is fundamental as to religion, so to art; and our ecclesiastical architecture must in straightforward fashion, without distortion and without disguise, express our faiths; to be honest, express even our differences, if we must have such. Religious differences, which are sufficiently vital to keep Christians in separate bodies, must be sufficiently vital and organic to put forth architectural forms fitted to express truthfully what each is.

* Henry Holiday, "Stained Glass as an Art," London, 1896.

† Ralph Adams Cram, "Church Building," Boston, 1901.

For example: I come upon what appears a great Gothic church. Its exterior suggests nave and aisles and transepts and choir with sanctuary and altar. I enter: within I find an amphitheater and sloping floor, and for focal center a speaker's platform and an organ. Is that truth-telling? Had the builders any distinctive religious ideals they felt bound to proclaim? Then why conceal them? If their supreme ordinance be preaching, why not build frankly an auditorium? The old altar-idea had vitality enough to build its cathedrals; if the new pulpit-idea has vitality enough, let it build, and as impressively as it can, what shall be its own.

We might glance at the other extreme. Signs are not wanting that the Roman Church is adopting, increasingly, Italian forms. The tendency is significant. It proves again how, when the principle has sufficient vitality, it will develop its visible type. We may repudiate the Roman idea, but we cannot easily mistake it.

Speaking as an Anglican, one may frankly confess that while our buildings tell—as they must—that we have a choir and an altar, and not a mere auditorium, yet the uncertain emphasis, the widely varying proportion, the haphazard arrangement, precisely express the state of mind of a church which has what many of her children do not understand and do not yet appreciate. Again: so long as some among us “choose” Norman and some Byzantine, while others shudder at “Debased Gothic” and think to fulfill all righteousness if only they build buttresses (though of wood), and make every window opening of a particular form of arch (though in shingles), and have transepts (in a village chapel), it is too evident that we need education, both as to what our church stands for and as to what are the first principles of ecclesiastical architecture.

Speaking still as an Anglican—inasmuch as the question is asked us—there is for an Episcopal Church at the present moment only one style. It is that which shall exhibit our Anglican heritage and our Anglican continuity. It is not a question of what we like,—for that matter, what is more beautiful, in rich, chaste, austere, religious beauty?—it is a question of telling the truth. Examples and inspiration are found in numberless mediæval and in many nineteenth-century English churches, at whose altars the Holy Eucharist is celebrated with the Book of Common Prayer, in whose chancels white-robed choristers sing our canticles and psalms and hymns. For seventy years the work has now gone on there, with errors and extravagances now and then, but in the main right and true; the Anglican Church has come to understand herself, her great lineage and her high calling. Her outward aspect, even in her churches, is increasingly conforming to her own type. “American?” No fear but it will be American enough; is not the Puritan English, too?

And to help our education, to solve the many questions arising between architects and clergymen, let us have an AMERICAN CHURCH BUILDING SOCIETY, bringing together architects, clergy and churchmen interested in these matters, building up an authoritative consensus of opinion, and establishing a higher standard of taste. Why not?

Notes on Standard Form of Specifications for Architectural Terra-Cotta.

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INTRODUCTION.

TWO kinds of terra-cotta are known in architecture: Ornamental or Architectural Terra-Cotta, which is used for the facing of buildings, or as a substitute for cut stone, and Structural Terra-Cotta, which is used for floors and partitions and for protecting steel frames of fireproof buildings. Contracts are always made with different contractors for the two kinds of terra-cotta, and in the following specification the Ornamental work has therefore been specified separately from the Structural work.

ARCHITECTURAL TERRA-COTTA.

As an ornamental material the use of terra-cotta is of great antiquity, being about contemporaneous with that of burnt bricks. It was frequently used in Italy during the early Renaissance, but after that it was not employed to any great extent until about the year 1870. Since then it has largely superseded the use of cut stone, both in Europe and in this country, especially for the fronts of fireproof buildings.

Much confusion has prevailed in the specifications for terra-cotta work, owing to the circumstance that four separate trades, the Terra-Cotta Makers, the Masons, the Carpenters and the Iron Workers, are involved and that the services of these four trades are not distinctly or consistently separated from one another. For example, almost all specifications state that “the Terra-Cotta Contractor shall furnish all the terra-cotta shown on the drawings,” etc., that “he shall provide his own scaffolds, centers,” etc., that “he shall furnish all anchors necessary to tie the terra-cotta to the masonry or ironwork,” etc., that “the mortar for the terra-cotta shall be as specified for brickwork,” etc.

Notwithstanding these requirements of the specification, what really happens in the majority of cases is this. The Terra-Cotta Contractor merely furnishes the terra-cotta at the building or f. o. b. cars; the Mason sets it in place and provides some of the anchors; the Iron Contractor supplies other anchors and sets all the brackets and anchors bolted or riveted to the structural work; and the Carpenter provides the centers and boxes and protects the work when set in place.

The failure to recognize this in the specification, and the requiring of one trade to do the work distinctly within the province of another, have led to no end of confusion and disputes and in some cases even to strikes. Much of this may be avoided if the specification strictly defines the limits of each trade and requires it to do nothing outside of its own particular field. The following specification has been drawn up with this in view. It is offered as a suggestion to those who have experienced difficulty in having terra-cotta contracts executed without disputes and misunderstandings.

CONTRACTOR TO SUPPLY TERRA-COTTA

The specification should require the Terra-Cotta Contractor merely to furnish the material free of charge at the building (or f. o. b. cars in the case of out of town contracts) ready to be set in place and in sufficient quantities to keep pace with the progress of the work. All work to be executed in terra-cotta should either be marked on the drawings or colored on the elevations. Because of the necessity of making terra-cotta in smaller pieces than cut stone, considerable anchoring and furring is necessary. Therefore when used in connection with structural steel work, the Terra-Cotta Contractor should carefully examine the structural drawings and make suitable provision in his work to enable it to be properly set. The pieces are all carefully packed at the shops and those with projections, such as capitals, which are liable to injury, are boxed and protected as well. This protection should not be removed until the pieces are ready to be set in place. It is not advisable, however, to specify the exact amount of packing necessary. That should be left to the judgment of the Terra-Cotta Contractor as he is required to deliver the material in perfect condition at the building.

TO THE MASON.

A point not always clearly defined is the responsibility for the condition of the terra-cotta after its delivery at the building. The Terra-Cotta Contractor, under the usual form of specification, is at the mercy of the Mason, so far as the care of his material is concerned, and no matter how much of it may be broken or damaged by careless handling he is, under ordinary circumstances, bound to replace it, although it has passed out of his hands. It seems no more than fair that the Terra-Cotta Contractor's responsibility for the sound condition of his material should cease at its delivery at the building, as from that time until set in the wall it is in the hands of the Mason. It has accordingly so been specified, and the Mason is required to replace at his own expense any material that is injured. The Mason unloads the pieces from the trucks as they are delivered at the building or from the cars, and it is thus made his interest as well as his duty to store them in a safe place, in a careful manner and according to the order in which the pieces are to be used, so that it shall be unnecessary to handle them frequently during the process of setting, and to take every precaution to prevent chipping and breaking in handling from the time the material is delivered until it is set in position. Few mechanics, apparently, realize that terra-cotta is as fragile as stone and that it requires equally careful handling. Should any of the pieces have been damaged during transportation, however, then the Mason is required to notify the Terra-Cotta Contractor of the numbers of such pieces immediately upon the arrival of the material at the building. When the contract is large enough to warrant it, the Terra-Cotta Contractor is sometimes required to send a competent man, familiar with handling terra-cotta, to superintend the unloading and sorting of the pieces and to see they are correctly set in place.

IRON CONTRACTOR TO SUPPLY AND SET IRON.

Some specifications state that the Iron Contractor shall furnish all the iron required for setting the terra-cotta,

others that the Terra-Cotta or Mason Contractor, whichever sets the terra-cotta, shall supply it. The Iron Contractor always furnishes and sets all iron or steel work which is fastened or connected to the structural work or frame of the building. In Plate I, for example, he would probably provide and set the 12-inch I bracketed out from the columns, the angle iron lookouts supported by it and riveted to the roof I beam and also provide the two horizontal angle irons on the legs of the lookout angles; but he would not set these angles unless they were bolted or fastened to the lookouts. But the Mason Contractor should furnish and set the rods between these angles which hold up the modillions and ornaments and the hook anchors which tie the blocks to the I beams, and in this specification he is required to do so. All this work is not a part of the structural work. It is required for supporting the terra-cotta, and a contract with an Iron Contractor requiring him only "to provide and set all structural work required" could not be construed to include it. On the other hand, the Terra-Cotta Contractor or Mason might not be allowed according to the Trades Union rules to set ironwork bolted or fastened to structural work. Therefore the specification should clearly require the Iron Contractor to provide what additional ironwork is needed to safely secure the terra-cotta. How much this will amount to is one of the most troublesome questions to decide in a terra-cotta specification. In the ordinary course of events the iron estimates are obtained long before the terra-cotta details are made, so the Iron Contractor is sometimes at a loss to know just what and how much iron will be required, and may refuse to include it in his estimate; but it is for the Architect, in consultation with the Terra-Cotta Contractor, to take all the trouble necessary to inform him unless it is strictly defined. It is this that has led to the reprehensible custom of requiring the Terra-Cotta Contractor to provide and set the iron.

MASON TO SUPPLY AND SET IRON

All ironwork which is not bolted or riveted to the structural work should be set by the Mason, who should also provide and set all ashlar and wall anchors, dowels, clamps, etc., just as he does for anchoring stonework. The anchors or rods used for fastening the terra-cotta should be wrought iron painted or galvanized to protect them from rust, or where the pieces to be fastened are small and light, copper wire may be used for anchoring them. The number of anchors required for each piece should be specified.

AND TERRA-COTTA.

The Mason also sets the terra-cotta, provides all mortar, hoisting apparatus and power and erects all necessary scaffolding.

CARPENTER TO PROVIDE AND SET ARCHES AND CENTERS AND PROTECT WORK.

The Carpenter should provide and set all arches and centers required and also protect as soon as set all projecting courses, such as cornices, belt courses, etc., all bases, capitals, jambs and other work liable to be injured. He should also keep all boxing in repair until the work is finished and ready to be cleaned down. The boxing must be of pine or spruce. Hemlock is unsuited for this purpose as it is liable to stain the terra-cotta.

MATERIAL AND WORKMANSHIP.

Other causes for the confusion which sometimes appears in terra-cotta specifications are that the tests for the material itself, unlike those for iron, steel and cement, have never been reduced to a standard and that the method of manufacture is not generally understood by specification writers, who, ignorant of technical details, sometimes call for impossible conditions and requirements. For these reasons, therefore, it has been thought advisable here to describe in a brief and general way the method of manufacture.

a. Advantages. Aside from its economical advantages the great value of terra-cotta as a building material lies in its durability. When made of the right material and properly burnt it is practically impervious to moisture, and hence is not subject to the disintegrating action of frost, which is such a powerful agent in the destruction of stone, neither does it afford a lodgment for vegetable growths as is the case with many stones. The ordinary acid gases contained in the atmosphere of cities have no effect upon it, and the dust which gathers on the moldings is usually washed away at every rainfall. The greatest advantage, however, possessed by terra-cotta is its resistance to heat, which makes it the most durable material known for the trimmings and ornamental work in the walls of fireproof buildings. Although terra-cotta has been used in this country but for a comparatively short time, it has thus far proved very satisfactory, being, in common with the better varieties of bricks, the most durable of all building materials. In Europe there are numerous examples of architectural terra-cotta which have been exposed to the weather for three or four centuries and which are still in good condition, while stonework subjected to the same conditions is more or less decayed. Terra-cotta is also much lighter than stonework, weighing from sixty-five to eighty-five pounds per cubic foot.

b. Manufacture. Terra-cotta is composed of practically the same material as bricks, and its characteristics, so far as the material itself is concerned, are the same. It requires, however, for its successful production a much better quality of clay than is generally used for bricks, while the process of manufacture is entirely different.

The first consideration in the manufacture of terra-cotta is the selection of the material. No one locality gives all of the clay required for first-class material, and each shade and tint of terra-cotta requires the mingling of certain clays from different localities.

A great variety of excellent clays are mined in New Jersey and in other near-by locations and also in the West, large quantities being used annually for making terra-cotta, fire bricks, pottery, tiles, etc. They are in a sufficient variety to give in themselves almost any color effect desired, from light cream to dark red. After being mined from the bank the clay is seasoned by exposure to air, then dried, sometimes by artificial heat, and finely ground. When this has been accomplished what is called "grog" or "grit" is added to the clay to cause a partial vitrification of the mass during burning and also to prevent by its presence the excessive shrinkage of unbaked clay. The grog or grit consists of fragments of old ornamental terra-cotta, old pottery and fire bricks broken in small pieces; this mixture is then taken to a crusher

where it is thoroughly crushed and ground. A suitable proportion of ground clay and grog is now mixed, and the mass is then tempered in a pug mill or between rollers. After passing through this process it is thoroughly mixed and has the consistency of putty; it is plastic and easy to work. This plastic mass is then formed into small cakes, of seventy-five or one hundred pounds, for convenience in handling, and sent to the pressing rooms.

If several pieces of terra-cotta of the same size and shape are required, a shrinkage model at the scale of about thirteen inches to twelve inches of plaster and clay is first made; the background of the model being of plaster and the ornament of clay, and from this a plaster mold is taken. When the plaster molds are hard and dry the plastic clay is pressed into them by hand and allowed to remain for a few hours, until it has acquired sufficient stability to be relieved from the mold, one mold lasting for about fifty impressions. Sometimes, in very particular work, the modeler may be called upon to retouch some of the pieces after having been relieved from the mold.

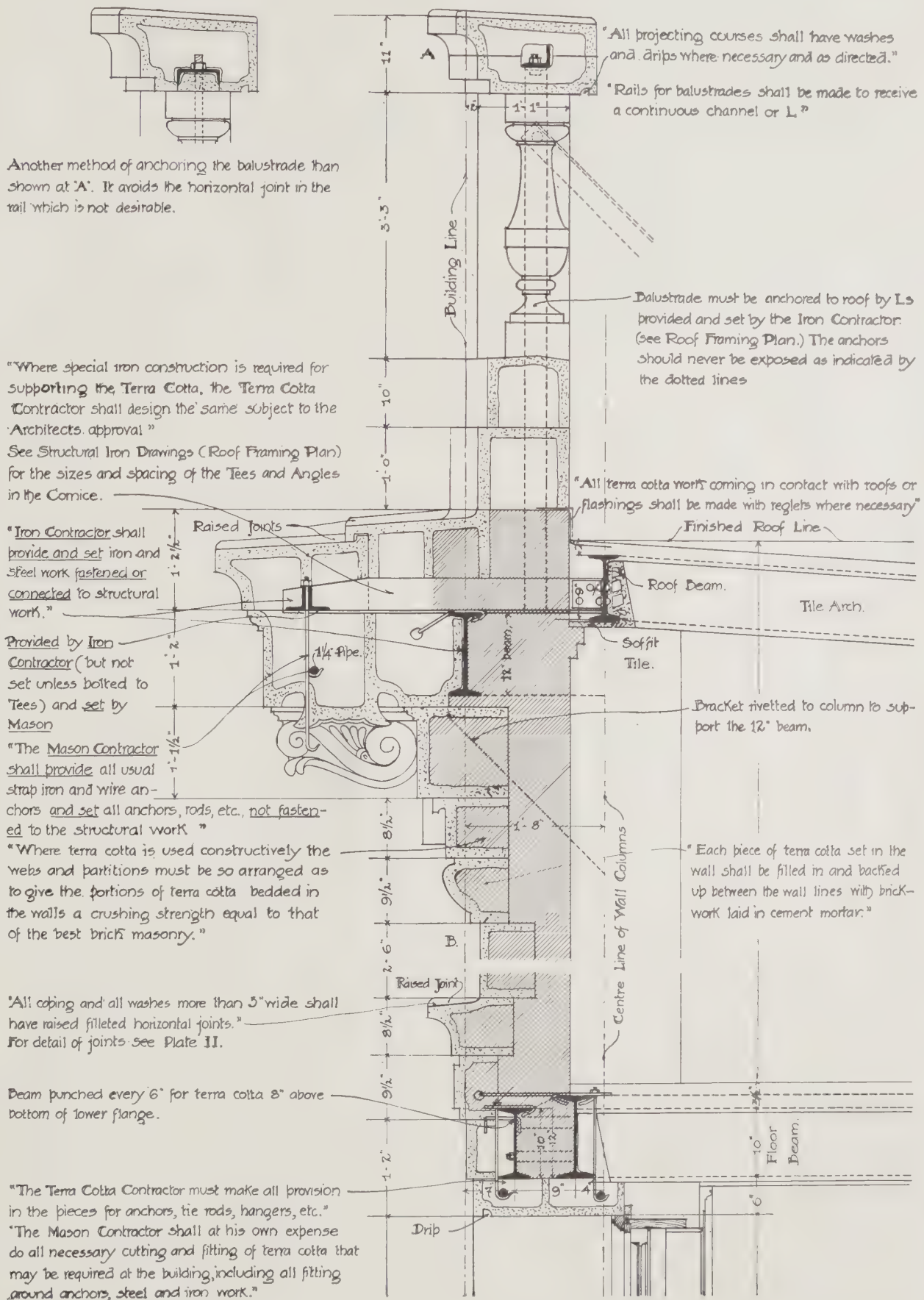
The unburnt terra-cotta is next dried to evaporate the moisture it contains, then sprayed with a properly prepared coating of clay and chemicals to give the color and texture of the surface required, and finally put into the kilns where it remains for about ten days, baking and cooling before it is ready for use. Properly speaking the terra-cotta is baked and not burnt, as it is never exposed to fire, but to heat radiated from brick ovens, just as bread is baked. Therefore it is strictly incorrect to speak of "hard burnt" terra-cotta, but as the usage of this term is universal it seems unwise to change it in the specification. During the baking, which is carried on at a white heat, (a temperature of from 2,000 degrees to 2,300 degrees Fahrenheit,) the metallic oxides and silicates produce a partial vitrification on the exterior of the terra-cotta. This harder skin or coating, which adds so much to the durability of the material, should remain intact and under no circumstances be chipped, chiseled or broken, although the joints may sometimes require chiseling or trimming in order to insure a close fit.

If only a single piece of terra-cotta is to be made, or where no repetition is intended, a mold may not be necessary, the clay being modeled directly into the required shape. The finished product thus bears the direct impress of the modeling artist. It can be studied, improved or modified, and, when entirely satisfactory, baked. On this account terra-cotta possesses, for highly decorative work, an advantage over all other building materials.

c. Inspection and tests. A sharp, metallic, bell-like ring and a clean, close fracture are characteristics of a homogeneous, compact and strong terra-cotta. No spalled, chipped, flashed or warped pieces should be accepted. The terra-cotta should be slightly glazed or vitrified on the surface, which should be so hard as to resist scratching with the point of a knife, and all moldings should come together perfectly at the joints. Terra-cotta is subject to unequal shrinkage in baking, which sometimes causes the pieces to become twisted. When this is the case great care must be taken in laying the

ARCHITECTURAL TERRA COTTA.

Details of Cornice and Balustrade.



Scale, One inch equals one foot.

C.R.W. 1904.

blocks, otherwise the long, horizontal lines of a building such as those of string courses or cornices, which are intended to be straight, are apt to be uneven, and the faces of blocks of plain flat ashlar are often "in wind," as it is called. This shrinkage amounts to almost an inch to the foot from the time the terra-cotta is molded until it is baked, and although proper allowance is made for it in molding, yet it is sometimes subject to slight variations. Twisted and warped blocks are sometimes set true by chiseling, but this, as before mentioned, should not be permitted, for if the vitreous surface be removed the material in some cases may not be able to withstand the attacks of the atmosphere so well.

The specification states that "a sufficient number of over pieces must be provided to guard against delay from faulty material." There is no rule for determining the number, which must be left to the discretion of the manufacturer.

COLOR AND FINISH.

The color of terra-cotta ranges from white to a deep red, according to the chemical constituents of the clays used. Within the past fifteen years a great impetus has been given to the production of special colors. In 1885 fully four-fifths of the terra-cotta produced in the United States was red; now hardly one-fifth is of that color, white, buff and gray being the prevailing colors. These colors are natural to the clay. Others, green, brown, blue, etc., are obtained just as in enameled brickwork by spraying the clay with a thin coating or slip composed of clay and chemicals. An irregular greenish color, however, may sometimes be due to absorption of moisture, an indication of a porous surface, or more probably to under-baking, as alkali salts present in the clay and not thoroughly consumed come out that color.

Formerly, when red terra-cotta only was used, no slip was applied, the color being the natural one of clay. Hence it was the custom to specify that "all terra-cotta shall be uniform in color throughout the entire block." Although this is still a requirement of some specifications, it can no longer be insisted upon. Almost all terra-cotta is now colored by spraying a body with a finer slip of clay and chemicals colored as desired. Three body colors only are used, red, buff and gray, the surface color being applied to them, so now it is only in rare cases that the color is "uniform throughout the entire block."

The terms "vitreous," "dull finish," "matte finish," "glazed," "semi-glazed" and "enameled" are used to designate the different surface finishes of terra-cotta, and they are all sometimes incorrectly applied. As a matter of fact there are but two surfaces; one has a dull, vitreous finish, also called "standard finish" by the manufacturers, produced by the fluxing of metallic oxides and slip upon the surface of the body terra-cotta, and the other has a bright porcelain-like, glazed or enameled finish, usually formed by a coating of slip covered with another of glaze. Glazed surfaces are sometimes given a dull glaze. This can be produced as a natural consequence of the process of manufacture, when it is known as a "matte finish," or it may be produced artificially by sand blasting a highly glazed surface. There is no such finish as "semi-glazed" now made by terra-cotta manufacturers.

The most durable surface, perhaps, is the first one, produced by fluxing oxides and slip upon the clay body.

But in any case, for the sake of durability, the finish should cover all exposed surfaces perfectly and should be absolutely non-absorbent, so that it may be cleaned down with sponge and water. Highly glazed work, if it has not been sand blasted, is generally tested with red ink to prove its non-absorbent qualities, and an exposure test is sometimes called for to determine whether the glaze crazes or pits. There are few glazes, however, that may not craze slightly if exposed. All surfaces of the body terra-cotta, except ornaments and background of same, are generally given a vertical drove, smooth rubbed, fine pointed or other finish in imitation of stone masonry.

DETAILS AND DRAWINGS.

In this as in all other building contracts a list of drawings furnished for estimating should be given the Contractor to avoid any misunderstanding. The Architect generally makes three-quarter-inch scale details and also full sizes of all terra-cotta work, but on account of the shrinkage in baking, which, as before mentioned, amounts to about one inch to the foot, the full sizes must all be redrawn larger by the Contractor at the works to allow for this, so that the finished product will be the required size. It is an excellent practice, and one which obtains in many offices, for the Architect to procure from the Terra-Cotta Contractor a shrinkage rule for making the details, in order to avoid redrawing and the consequent chance of error.

MODELED WORK.

Just as in carved stonework, plaster models are made of all ornamental terra-cotta work, not only to get the relief, etc., which cannot be shown so easily on the full size details, but also, as has been said, for the purpose of making a mold from the model for the pressing of the actual pieces. These models are made by the Terra-Cotta Contractor at his own works at the shrinkage scale. It is frequently specified, as it has been in this specification, that the models must be inspected and approved by the Architect before any of the terra-cotta is baked. Where the factory is at some distance, however, considerable delay and inconvenience might result if the specification should require the Architect to personally inspect and approve the models before beginning work. In such cases, therefore, the alternative given in the specification of submitting photographs of modeled work for approval is much more convenient for all concerned.

SIZES.

Terra-cotta, whether plain or ornamental, is always made of hollow blocks formed with webs inside so as to give extra strength and keep it true while drying. Although terra-cotta can be made solid, making it hollow requires less raw material, the pieces dry quicker, can be burned quicker and, of course, are less expensive. Then the weight of hollow terra-cotta, which is much less per cubic foot, also effects a saving in freight, cartage and cost of handling at the building. The hollow blocks are generally made from 18 inches to 2 feet long, from 6 to 12 inches deep and of a height determined by the character of the work, although pieces have been made from 6 to 8 cubic feet in volume and weighing one-quarter of a ton. The outer shell is made $1\frac{1}{2}$ inches thick and the webs and partitions about 1 inch thick. The parti-

tions should have numerous holes in them for convenience in handling and to afford a clinch for the mortar and brickwork used for the filling and backing, and they should be so arranged that the open spaces shall not exceed 6 inches. In fact, all the work should be divided into as short lengths as practicable. Short lengths are more easily handled and are less liable to break and warp than long ones, although, contrary to the general belief, small pieces are more expensive to manufacture than large pieces, and the Terra-Cotta Manufacturer, in laying out the sizes, only endeavors to keep the Architect within bounds. Usually when the Terra-Cotta Manufacturer advises a reduction in the size of a piece the Architect will be wise to accede to his request. As a rule it is impracticable to span an opening of any considerable length in one block, and even window sills are generally made in pieces about 18 inches or 2 feet long. Jamb blocks are usually 1 foot 6 inches in height or thereabout. Mullions, transoms and tracery should be made in as many pieces as the design will admit, and if there are several members in the reveal moldings they should be divided, care being taken that the joints are well broken or bonded in elevation. String courses and cornices should be divided into as short lengths (2 to 3 feet) as convenient. Plain ashlar, in which the warping is more evident than in molded surfaces, should not exceed 12 by 24 inches in size where it has a depth or bond in the wall of only 4 inches, although it can be made larger for a 6 and 8 inch bond.

All terra-cotta work, therefore, should be laid out with these limitations in view, and a careful study of the sizes of the blocks and the position of the joints should be made on the $\frac{3}{4}$ -inch scale drawings. Two ways of providing for this are specified. The first is to require the Contractor to investigate the sizes and manner of jointing and to consult with the Architect in regard to producing the best results, which, owing to the special nature of the material, he is better fitted to do. The second is for the Architect to show the position of all the joints and the sizes of all the pieces, the work being so designed as to form part of the construction and to adapt itself as far as possible to being divided into pieces of moderate size. When used for trimmings in connection with brickwork it is necessary that the pieces shall be of the exact height to bond in with the courses of bricks, and a small section of brickwork should be built up to get the exact heights, before the final drawings for the terra-cotta are sent to the manufacturer. The depth of the bond should always be specified by the Architect, care being taken not to make it excessive. Where it is not specified, Terra-Cotta Contractors figure on 4 inches for flat work without any projections. As noted on Plate II, the bond for some of the pieces is excessive. Although this may be shown on the Architect's drawings, in the actual working out of the pieces just as good results would be obtained by reducing the bond to 4 inches, thus doing away with cutting around the ironwork, and in some cases with the necessity for anchors.

CONSTRUCTIVE TERRA-COTTA.

When terra-cotta is used constructively, that is, when it is bedded into and forms part of the wall, it should have a strength at least equal to that of the best brick masonry. The safe working strength of ordinary hollow blocks is

five tons per square foot, but by a careful arrangement of the webs and partitions and by filling them solid with concrete or brickwork the crushing strength may be increased to ten tons per square foot.

DRIPS, JOINTS, ETC.

It was formerly the custom to specify that window sills, copings and other horizontal courses should have "roll or lap joints," as they were called, in which the joint was protected by a $\frac{1}{2}$ round mold raised above the surface, as shown in Figure A, Plate II. Terra-Cotta Contractors objected to this because of the difficulty of making the roll, of its liability to become broken off or chipped in handling, and also because it precluded the possibility of rubbing the terra-cotta on the rubbing bed and recommended instead a raised filleted joint, shown in Figure B, which has now superseded it. The pieces should terminate under the wooden sill rather than against the edge, and a raised fillet across the end let into a groove on the underside of the sill, as shown, prevents water from penetrating the wall during driving rains.

Where buildings are trimmed with terra-cotta the cornice is generally made of the same material, as it is much lighter and cheaper than stone, especially if elaborately decorated, besides permitting of lighter walls. With stone cornices it is necessary that the various pieces be of sufficient depth to balance on the wall. With terra-cotta cornices, however, this is not necessary or customary, the various pieces being made to build into the wall only 8 or 12 inches and to be supported by ironwork.

Generally small steel L's and T's, as shown in Plate I, are used for supporting the projecting members, and where the projection is so great as to overbalance the weight of the masonry on the built-in end, allowing for the weight of snow on the projection, the inner ends of the supports are anchored by rods carried down into the wall until the weight of the masonry above the anchor is ample to counteract the leverage of the projection. Therefore, wherever iron is used for tying the cornice to the walls it is necessary to determine the method of anchoring before the pieces are molded, as in manufacturing them holes or slots must be made for inserting the beams, rods and anchors.

CUTTING AND FITTING.

Before any of the terra-cotta pieces are shipped from the factory they are carefully fitted together by the Contractor and numbered to the numbers on the "setting plan," which is sent to the Mason to enable him to properly set the work. Vertical joints are rubbed down on a rubbing bed in order to straighten out inequalities and make a neater finish. Other cutting and fitting is necessary at the building, as, for example, for the fitting of the terra-cotta work around the ironwork and frame, but this should be done by the Mason as he handles and sets the work. It might be argued that he would be unable to estimate how much of an item this might be, but every specification for the erection of a building at present requires the Mason to do all cutting and patching for all other contractors, and it is no more difficult to estimate for the terra-cotta work than for theirs.

SETTING, MORTAR, JOINTS, BACKING, ETC.

Terra-cotta should always be set in either natural or

Portland cement mixed with sand in about the proportion of one to two. The method of setting the terra-cotta is similar to that of stone setting and is done by the Mason. As soon as set the outside joints should be raked out to a depth of $\frac{3}{4}$ inch to allow for pointing and to prevent chipping. The terra-cotta should be built up in advance of the backing, one course at a time, and all the voids in blocks set in the wall should be filled between the wall lines with mortar, into which bricks should be forced to make the work as solid as possible. All blocks, not solidly built into the walls should be anchored with galvanized iron clamps the same as used for stonework, and as a rule all projecting members over 6 inches in height should be anchored in this way. After the walls are up the joints should be pointed with Portland cement colored with a mineral pigment to correspond with the color of the terra-cotta. The pointing is done in the same way as for stone, except that the horizontal joints in all sills and the washes of belt courses and cornices should be raked out about 2 inches deep and calked with oakum for about 1 inch and then filled with an elastic cement. The joints in terra-cotta are about the same thickness as those in good stone ashlar, $\frac{1}{4}$ inch, with a maximum thickness of $\frac{3}{8}$ inch. In enameled work finer joints $\frac{1}{8}$ inch thick are used, with a maximum thickness of $\frac{1}{4}$ inch.

COST.

A single piece of terra-cotta or a plain cap or sill costs about the same as sandstone or limestone when the rough stone can be delivered at a price not exceeding 90 cents per cubic foot. When, however, a number of pieces exactly alike are required, they can be produced in terra-cotta cheaper than in stone, unless the terra-cotta has to be transported at a large cost for freight. The advantage in point of cost in favor of terra-cotta is greatly increased if there be a large proportion of molded work, and especially if the moldings are enriched, or if there are a number of ornamental panels, carved capitals, etc. The use of terra-cotta for trimmings and especially for heavy cornices in place of stone often reduces the cost of walls and foundations, as the weight of terra-cotta will be much less than that of stone, and the walls and foundations may be made lighter in consequence.

TIME REQUIRED.

Finally, contracts for terra-cotta and the drawings should be made at least six weeks before the material will be used because of the time required to make it. Architects should bear this in mind when laying out their work. If they delay making their drawings they cannot expedite matters by hurrying the Terra-Cotta Contractor and urging him to turn out his work in four weeks or less. Six weeks is the shortest reasonable time in which it can be done.

Standard Form of Specification for Architectural Terra-Cotta.

Expressions in italics may be changed. Expressions in parenthesis () may be omitted and those in brackets [] substituted instead, preference generally being given to the first.

All sizes and dimensions are approximate and not absolute.

If made a sub-contract insert suitable general clauses.

CONTRACTOR TO SUPPLY TERRA-COTTA

The Terra-Cotta Contractor shall furnish and deliver free of charge (at the building) or [f. o. b. cars], as fast as required but without encumbering or interfering with the work of other contractors, all the terra-cotta (shown on the drawings) [colored pink on the elevations] or (hereinafter specified;) [the terra-cotta is used in connection with the structural steel work, and a careful study of the structural steel drawings should be made by the Terra-Cotta Contractor, as he must supply any additional labor or materials, other than shown on the drawings, necessary to properly construct the terra-cotta.]

All pieces are to be carefully packed in hay or straw for transportation, and those with projecting parts, liable to injury, such as caps, bases, etc., are to be thoroughly protected by boxing or crating, which protection shall not be removed until the pieces are ready to be set in place.

TO THE MASON.

The Mason Contractor must unload the terra-cotta (at the building) or [from the cars] and store the same in a safe place and in accordance with the setting plans, to avoid a frequent handling of the pieces; should any pieces have been damaged in transportation he shall notify the Terra-Cotta Contractor immediately upon the arrival of the material. He shall also take every precaution to prevent chipping and breaking from handling, from the time the material is delivered until it is set in place, and shall replace at his own expense any material so injured.

[Where contract is large enough to warrant it.] The Terra-Cotta Contractor shall at his own expense send a competent man to the building to superintend the unloading and sorting of the terra-cotta and to see it is correctly set in place.

IRON CONTRACTOR TO SUPPLY AND SET IRON.

The Iron Contractor shall furnish all iron and steel work necessary to support the terra-cotta and to tie the same properly to the steel and iron frame of the building, except the usual strap iron and wire anchors which are to be provided and set by the Mason.

The Iron Contractor shall also set all iron and steel work fastened or connected to the structural work. Where special iron construction is required for supporting the terra-cotta, the Terra-Cotta Contractor shall design the same, subject to the Architects' approval.

MASON CONTRACTOR TO SUPPLY AND SET IRON

The Mason Contractor shall furnish all usual strap iron and wire anchors, rods, bolts and hook bolts required to properly support and tie the terra-cotta to the masonry and to the steel frame, and he shall also set all anchors, rods, bolts, etc., not fas-

tened to the structural work; the anchors shall be of (galvanized wrought iron) [wrought iron coated with asphaltum put on hot] or (proper size copper wire).

AND TERRA-COTTA.

He must also set all terra-cotta work and provide all mortar, all hoisting apparatus and power, and erect all scaffolding to properly set the same.

CARPENTER TO PROVIDE AND SET ARCHES AND CENTERS AND PROTECT WORK.

The Carpenter shall provide all arches and centers required and set, ease and strike same.

He must also protect with pine or spruce boards (not hemlock), as soon as set, all projecting courses and cornices, all bases, capitals, jambs and other work liable to injury and keep the same covered until the front is cleaned down.

MATERIAL AND WORKMANSHIP.

The material for all terra-cotta must be carefully selected clay, hard burnt and free from all imperfections of any kind; it must give a sharp, metallic, bell-like ring when struck, show a uniform fracture and be so hard as to resist scratching with the point of a knife.

All blocks must be straight and true, out of wind and be provided with necessary webs and ribs; where continuous molds are used they must be of uniform size and come together closely at the joints, and ashlar and other flat pieces must be straight and show no wavy surfaces or lines when set.

No warped, swollen or twisted, under or over burnt, spalled, chipped, cracked, discolored or painted pieces will be accepted.

A sufficient number of over pieces must be provided to guard against delay from faulty material.

COLOR AND FINISH.

All terra-cotta, except in . . . where it is to be enameled or glazed, is to have a vitreous surface of a uniform *buff* color corresponding to sample in Architects' office, and all surfaces except ornaments and background of same shall have a (*vertical dove finish*.)

Enameled or glazed terra-cotta shall be of a uniform (*ivory white*) shade and shall have a smooth surface with a (bright finish) [dull finish, free from any gloss whatever produced by sand blasting the glazed surface particularly prepared for this purpose] (matte finish, free from any gloss whatever,) like sample in Architects' office; the enamel or glaze must cover all exposed surfaces perfectly, be absolutely non-absorbent, and maintain its surface and color without crazing or popping when exposed to the weather.

DETAILS AND DRAWINGS.

The Architects will furnish (full size) [large scale] or (shrinkage scale) details for all terra-cotta work, which must be executed in strict conformity to them.

The following is a list of drawings furnished for estimating: . . .

The Terra-Cotta Contractor shall furnish working drawings for all terra-cotta work, showing all details, joints, etc., and also for all ironwork, *i. e.*, anchors,

brackets, rods, etc., which must be approved by the Architects in writing before any of the terra-cotta work is begun; he shall also keep at the building setting drawings for the use of the Mason setting the work.

MODELED WORK.

This Contractor shall also furnish models for all ornamental work and shall employ for this purpose the very best modelers and sculptors. (Photographs of all modeled work shall be submitted for approval) [All modeled work will be inspected by the Architects before burning] and no work shall be burnt until such (approval) [inspection] shall have been obtained by the Contractor.

All moldings will be profiled so as to draw from the molds and those in . . . are to be undercut after pressing.

SIZES.

(The Terra-Cotta Contractor shall carefully investigate the sizes and manner of jointing the terra-cotta and consult with the Architects in regard to producing the best results.) or [Each piece of terra-cotta shall be of the size shown on the drawings, unless otherwise detailed by the Architects, and all joints also must be as indicated on the drawings: should it become necessary to change them the Contractor shall notify the Architects and obtain their written approval before making the change.]

Unless otherwise shown the bond for all terra-cotta shall be 4 inches.

CONSTRUCTIVE TERRA-COTTA.

Where terra-cotta is used constructively the webs and partitions must be so arranged as to give the portions of terra-cotta bedded in walls a crushing strength equal to that of the best brick masonry; the Terra-Cotta Contractor will be held responsible by the Architects for the structural capacity of all such work.

WASHES AND DRIPS.

Projecting courses shall have washes and drips where necessary and as directed by the Architects.

JOINTS.

All sills and copings, and all washes more than 3 inches wide, shall have (raised filleted) horizontal joints, and the sills shall have a raised fillet across the end to be let into a groove on the under side of the wooden sill.

COPINGS.

All copings, except ordinary vitrified salt glazed tile coping, shall be provided by the Terra-Cotta Contractor, which shall be made with reglets for counterflashing, as (shown on the drawings and details) [directed] wherever they come within 8 inches of the roof.

REGLETS.

All other terra-cotta work coming in contact with roofs or flashings shall also be made with reglets to receive the same.

SOFFITS.

All soffits are to be made plain except . . .

DOWN SPOUTS.

Cut all openings for down spouts or conductors, allowing $\frac{1}{2}$ inch all around for expansion.

GUTTERS.

The cross section of all gutter moldings is to be uniform, the pitch for the metal gutter being formed by furring or cementing.

BALUSTRADE.

Rails for balustrade shall be made to receive a continuous channel or L iron.

RUBBED WORK.

All work in first and second stories shall have rubbed horizontal and vertical joints rubbed down on a rubbing bed at the factory.

CUTTING AND FITTING.

The Terra-Cotta Contractor shall carefully fit all terra-cotta work together at his factory and correctly number the same for setting to correspond with setting plans, which he shall furnish.

He shall also make all provision in the pieces for anchors, tie rods, hangers, etc., hereinafter specified or shown on the working drawings approved by the Architects.

The Mason Contractor, however, shall at his own expense do all necessary cutting and fitting of terra-cotta that may be required at the building, including all fitting around anchors, steel and iron work, etc.

SETTING.

All terra-cotta work shall be set true to a line and closely fitted.

MORTAR.

The mortar is to be *as specified for brickwork*.

THICKNESS OF JOINTS.

All joints throughout, except in enameled work, shall be well filled and as near $\frac{1}{4}$ inch thick as possible, $\frac{3}{8}$ inch being the maximum thickness allowed: enameled joints shall be as near $\frac{1}{8}$ inch thick as possible, with a maximum of $\frac{1}{4}$ inch.

All pointing shall be done (*with the same mortar*) as the work progresses, except (*the enameled ashlar joints*) where *colored mortar* shall be used, in order to make the joints as inconspicuous as possible: the horizontal joints in all sills and projecting courses shall be raked out 2 inches deep, calked with 1 inch of oakum and then filled in with (*an elastic cement*).

BACKING. (Plate I.)

Each piece of terra-cotta set in the wall shall be filled in and backed up between the wall lines with brickwork laid in cement mortar (*as specified for brickwork*).

CLEANING DOWN.

When directed by the Architects the Mason Contractor shall clean down all terra-cotta together with the brickwork, repoint the joints and leave the entire work satisfactory to them.

DEFECTIVE WORK.

If any cracking, blistering, deterioration or discoloration shall occur in the work at any time within a period of one year from the issuance of the final certificate, all such damaged portions must be replaced and made good by the Terra-Cotta Contractor without cost to the Owner.

Editorial Comment and Selected Miscellany

ARCHITECTS AND EXPERTS.

THE position of the expert in relation to a great modern building is something which is more persistently, we believe, misunderstood by the expert himself than by any one else. In fact, the expert on individual features of a great building is so recent a factor and has



WOMAN'S MAGAZINE BUILDING, ST. LOUIS, MO.

Herbert C. Chivers, Architect.

Built of St. Louis Hydraulic-Press Brick.

taken himself so seriously, on the whole, that it is only natural that from his standpoint the position of the architect as the director of the whole work and his own position as efficient manager of a portion of that whole work should become often confused. There is probably not one architect in fifty who knows as much about plumbing as any one of a dozen or more first-class plumbers in any large city. Neither is the architect likely to know much practically about carpentry or about masonry or any one of the dozen or more trades which ordinarily enter into the make-up of a building, but regarding which there is



DETAIL, MERCHANTS AND MINERS S. S. CO. BUILDING,
BALTIMORE, MD.

Charles E. Cassell & Son, Architects.
Atlantic Terra-Cotta Co., Makers.

no question of the architect's knowledge. Twenty-five years ago there were experts in plumbing who, it was assumed, would in time usurp a certain portion of the architect's functions; but with greater diffusion of knowledge the plumbing expert has almost disappeared as a factor, and it is only on the branches of engineering, pure and simple, of decoration in a lesser degree, and to a certain extent of landscape work, that the architect is supposed to be sufficiently inefficient not to be able to come to a right



MCKINLEY HIGH SCHOOL, CHICAGO.

W. B. Mundie, Architect.

Built of dark gray brick made by Columbus Brick & Terra-Cotta Co.

feeling in this matter is very clear and has been formed by observation of the practice both among engineers and architects. The employment of specialists about a building, when that specialist is given complete control of one department, is not so much a practical or engineering or architectural necessity as a matter of business and constructive ex-



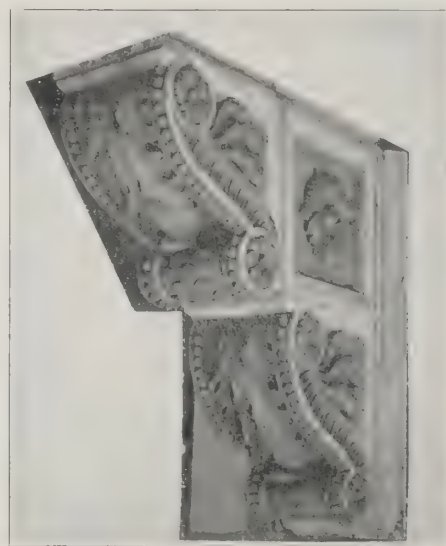
DIAMOND NATIONAL BANK BUILDING, PITTSBURG, PA.

McClure & Spahr, Architects.

Fireproofed by National Fireproofing Co.

decision. And yet from our experience in the various cities of this country we believe that architects who would be classed as thoroughly well trained, are, as a rule, better acquainted with the engineering practices involved in their buildings than they are with the details of such simple things as masonry or plumbing. Our

pediency. It is not that the architects are not able to, either through themselves or their trained corps of helpers, successfully plan all the ordinary details connected with a large building; but it is rather that such work, while a function of architecture, can safely be left to those who make a special business of it, leaving the architect more free to attend to the more vital matters of architectural design and planning. No architect with a large practice today would undertake to superintend personally all his buildings. He leaves these to specialists. At the same time he can very easily control his superintendence, and he does not actually need to surrender any real function of his profession by handing certain details over to others to work out. Just as a partnership of two or more architects has come to be considered an advisable architectural expedient, so has the employment of the specialist in the engineering, decorative and landscape work proven itself to be a business advantage.



DETAIL, EXECUTED BY BRICK, TERRA-COTTA & TILE CO.



DETAIL, EXECUTED BY THE NEW YORK ARCHITECTURAL TERRA-COTTA CO.



CONSERVATORY, HOUSE 2047 CHESTNUT STREET, PHILADELPHIA.
Wilson Eyre, Architect.

tage to the architect himself. And while such surrender of a portion of the work could very easily be carried too far and the engineering details worked out quite distinct from the architecture, to the detriment of the building as a whole, it is beyond question that the standard of educational requirements on the part of our architects has on the whole fairly well kept pace with the introduction

of special problems into our large buildings. We advise the employment of specialists. We believe it is for the good of the building and for the better development of the profession, but under no circumstances ought the specialties to be worked out distinctly from the architecture. If the steel construction or the heating and ventilation is placed in the hands of an engineer, that engineer should make his drawings in the office of the architect, under his immediate direction and in daily consultation, not only with the architect himself, but with his assistants, before working out the other details of the building. To an equally positive extent is this true of the decoration and of the landscape work. The arts and the sciences, the practical requirements and the artistic touch, are one and inseparable if a building is to be a success. And it is the failure to recognize the absolute necessity of personal contact and coöperation that has brought



PLANS, HOUSE 2047 CHESTNUT STREET, PHILADELPHIA.
Wilson Eyre, Architect.

about a separation of feeling between some architects and some experts, a feeling which is bound to lessen rather than increase as experience and greater educational opportunities offer themselves to both parties, and especially in proportion as our architectural successes are better rounded and more complete.

IN GENERAL

The brick from which was built the new addition to the Hotel Imperial, illustrated in the half-tone plate form for this number,



KEITH'S THEATRE, PHILADELPHIA, PA.
Bruce Price, Architect.
Terra-Cotta made by Conkling-Armstrong Co.



EXHIBIT OF THE WINKLE TERRA-COTTA CO.,
WORLD'S FAIR, ST. LOUIS, MO.

were furnished by Robert C. Martin & Son, 156 Fifth Avenue, New York.

Wilkinson & Magonigle were the architects for the Sheldon Court Dormitory, illustrated in *THE BRICKBUILDER* for December, and not H. Van Buren Magonigle, as given at the time.

Jesse T. Johnson, architect, 1113 State Life Building, Indianapolis, Ind., has succeeded to the business of Dupont & Johnson. Manufacturers' catalogues and samples desired.



LOW RELIEF GLAZED FIGURE DECORA-
TION IN OFFICE OF NORTHWESTERN
TERRA-COTTA CO., RAILWAY EX-
CHANGE BUILDING, CHICAGO.

The exhibit of the Tiffany Enamelled Brick Company at the St. Louis Exposition was awarded Grand Prize by the judges.

The Toronto Beaux Arts Club has just been formed, having as its purpose the advancement of its members in their respective callings, and also the promotion of good fellowship. The membership will comprise architects, draughtsmen, designers and those who are engaged in kindred work. The following officers were elected: Hon.

President, Frank Darling; Hon. Vice-Presidents, C. H. Acton Bond, W. A. Langton; President, S. Ashton Pentecost; First Vice-President, W. B. Van Egmond; Second Vice-President, Franklin E. Belfry; Secretary-Treasurer, L. McGill Allan.

The twentieth annual exhibition of the Architectural League of New York will be held in the building of the American Fine Arts Society, 215 West Fifty-seventh Street, New York City, from February 10 to March 4 inclusive.

The subjects for the Gold and Silver medals, the President's Prize, and the Henry O. Avery Prize, three competitions which are held under the auspices of the Architectural League of New York, are as follows: Medal Competition, "A Village Block in a Small Country Town"; President's Prize, Design for a Book-Plate; Avery prize, A Terra-Cotta Flower Box Suitable for Use on a Porch Between Columns.

At the second annual election of the Architectural Draughtsmen's Club of New York the following officers were elected to serve on the executive committee for the year 1905: President, L. A. Cramer; vice-president, A. T. Rose; recording secretary, W. F. Anderson; corresponding secretary, W. T. Smith; treasurer, A. M. Hedley. A programme of varied and inter-



RESIDENCE OF CHARLES HEAD, ESQ., BOSTON.

Shaw & Hunnewell, Architects.

The rear wall leaked badly when built in 1889. It was treated with Cabot's Brick Preservative and has never leaked since.



DETAIL OF FEATURE OVER ENTRANCE, 40-46 BROADWAY,
NEW YORK CITY.
Henry Ives Cobb, Architect.
Terra-Cotta made by Excelsior Terra-Cotta Co.

esting monthly prize competitions, combined with a series of discourses by prominent professional men, will constitute the year's current work.

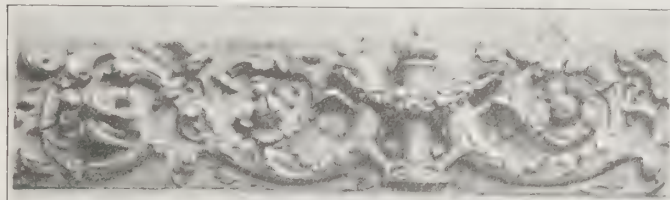
In 1880 the Boston Fire Brick Company having a fire brick plant on its hands with no one to manage it, and the firm of Fiske & Coleman having an established business in the buying and selling of fire brick, sewer pipe, etc., but having no fire brick plant,

formed a "merger," the firm taking the management of the joint business under the title, "Boston Fire Brick Company, Fiske & Coleman, Mgrs." This merger agreement has been renewed from time to time till now, with some changes in the name of the managing firm, but with Mr. George M. Fiske always at the head of the management. Recently



DETAIL EXECUTED BY NEW JERSEY
TERRA-COTTA CO.

Mr. Fiske and Mr. Thomas W. Peirce, who for the past two years has been treasurer of the Fiske Brick Company, have purchased a controlling interest in the Boston Fire Brick Company, and the following officers of the corporation have been elected: George M. Fiske, president; Thomas W. Peirce, treasurer; J. Parker B. Fiske, clerk. The above are also directors with Charles B. Warren and Thomas B. Griggs. The business will go on as before



DETAIL, BY GEORGE E. MURPHY, ARCHITECT.
Perth Amboy Terra-Cotta Co., Makers.

under the title, "Boston Fire Brick Company, Fiske & Company, Mgrs."; the managing firm consisting of George M. Fiske, J. Parker B. Fiske and Thomas W. Peirce.

The trustees of the University of Pennsylvania announce the third competition for the Alumni Fellowship in Architecture. This fellowship, of the value of one thousand dollars, was established in 1903 for annual award during a term of five years in recognition of the



STABLE AT LEXINGTON, KY.
Copeland & Dole, Architects
Roofed with American "S" Tile, Cincinnati Roofing Tile & Terra-Cotta Co., Makers.

action of the General Architectural Alumni Society in securing by general subscription among its members, for the needs of the School of Architecture, a fund of five thousand dollars.

All persons under thirty years of age who have taken at the University of Pennsylvania either the degree of B. S. or M. S. in architecture or the certificate of the two-year special course in architecture are eligible to the competition, save only such as may have already secured opportunities for foreign travel and study equivalent to those conferred by this fellowship.

WANTED: By an institution engaged in numerous building operations, young architect or architect's senior student and draughtsman; one possessed of some practical knowledge and with an aptitude for detail. He will be required to scrutinize plans and specifications furnished by architects; keep in communication with the clerk of the different works; see that detailed working drawings are promptly placed in the hands of the various contractors; and generally to exercise a systematic supervision of the operations. Permanent position. The salary will be in keeping with the experience and capabilities of the appointee. Address Inspector, care The Brickbuilder.

DRAUGHTSMAN WANTED: Steady position offered if satisfactory. Apply Atlantic Terra-Cotta Co., Tottenville, Staten Island.

Competition for a Fireproof House

Constructed of Terra-Cotta Hollow Tile Blocks To cost \$10,000

First Prize, \$500 Second Prize, \$200 Third Prize, \$100

PROGRAMME



THE possibilities in the use of burnt clay in its various forms in our domestic architecture have only begun to be realized.

That dwellings of moderate cost should be made fireproof is not only recognized as desirable, but practicable.

The object of this competition is to call out designs for a house, the walls, floors and partitions of which are to be of terra-cotta hollow tile blocks.

The cost of the house, exclusive of the land, is not to exceed \$10,000. Designs calling for a more expensive house will not be considered.

A detailed statement of costs must accompany each design. This statement is to be typewritten on one side only of a sheet of paper measuring 11 inches x 8½ inches.

A further object of this competition is to encourage a study of the use of burnt clay products of the particular class mentioned, in an artistic as well as practical manner, and to obtain designs which would be appropriate for such materials.

In the selection of blocks for exterior walls, terra-cotta hollow tile fireproofing blocks must be employed, and not architectural terra-cotta blocks.

REQUIREMENTS: The house is supposed to be built in the suburbs of a large city, upon a corner lot, with a frontage of 100 feet towards the south and 150 feet on the side street towards the east. The grade is practically level throughout. The house is to be two stories high with an attic. This attic may be either in the pitch of the roof or a third story may be treated as an attic with a flat roof. On the first floor there is to be a reception room, a library, a dining-room, a kitchen and the ordinary allowance for pantries, coat rooms, stairways, etc. The front hall may be treated as desired. In the second story there are to be two bathrooms, four chambers, a sewing room, a den, linen closet, etc. The third story should contain at least two servants' rooms, besides a storeroom. Fireplaces, bay windows, seats, etc., are at the option of the designer.

The clear height is to be in first story 10 feet, second story 9 feet, third story optional with the designer. The cellar need not be specially planned, but will have a clear height of 8 feet. Arrangement of piazzas to be left with the designer.

CONSTRUCTION: While the method of construction for walls, floors and partitions is to be determined by the designer, the following suggestions are offered as being practicable and admissible:

First. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the treatment of the faces of the blocks to be appropriate for such materials.

Second. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the face of the wall to be rough cast or plastered.

Third. The outside walls may be faced with brick, with a backing of 8-inch hollow tile blocks.

Fourth. The outside wall may be built with an outer and inner wall, with an air space of 4 inches between, using in each wall a 4-inch hollow tile. The treatment of the face of such a wall, and the manner of bonding the outer and inner walls, are left to the designer. The plaster finish may be applied direct to the interior surface of such a wall.

If hollow tile blocks are used for facings, any special features in the finish or treatment of their exposed surfaces should be given in a footnote on sheet showing elevations.

For the interior partitions terra-cotta blocks are to be used.

For the floors one of the long span, terra-cotta hollow tile block systems now on the market, which are adapted up to spans of 20 feet without the use of steel beams, or a system which employs terra-cotta hollow tile blocks in connection with light steel construction.

DRAWINGS REQUIRED: On one sheet the front and a side elevation, at a scale of four feet to the inch; also plans of first and second floor, at a scale of eight feet to the inch, and on another sheet details showing clearly the scheme of construction for the exterior walls, the floors and the partitions, together with other details drawn at a scale sufficiently large to show them clearly. Graphic scales to be on all drawings.

The size of each sheet is to be exactly 24 inches by 36 inches. The sheets are not to be mounted.

All drawings are to be made in black line without wash or color. All sections shown are to be crosshatched in such manner as to clearly indicate the material, and the floor plans are to be blocked in solid.

Each set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., on or before April 15, 1905.

The designs will be judged by well-known members of the architectural profession.

In making the award the jury will take into account, first, the fitness of the design in an artistic sense to the materials employed; second, the adaptability of the design as shown by details to the practical constructive requirements of burnt clay; third, the relative excellence of the design.

Carefully made estimates giving relative costs of fireproof and ordinary wood construction for houses built from the designs awarded the three cash prizes will be obtained by the publishers of THE BRICKBUILDER, and given at the time the designs are published.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned, except the prize drawings, may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

For the design placed first in this competition there will be given a prize of \$500.00.

For the design placed second a prize of \$200.00.

For the design placed third a prize of \$100.00.

In the study of this problem, competitors are invited to consult freely with the manufacturers of burnt clay fireproofing or their agents. This competition is open to every one.

THE BRICKBUILDER.

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Competition for a Village Church

First Prize, \$500 Second Prize, \$200 Third Prize, \$100

PROGRAMME



HE problem is an Episcopal Church in a large village. The location may be assumed in any portion of the United States. The lot is 80 feet wide on the west and 180 feet deep on the south. It is on a corner of two streets of equal importance. To the southwest a main avenue communicates with the principal square of the village, the grade of this street down to the square being 7 per cent. The lot itself is perfectly level and is in the residential portion of the village. The problem considers only a church with sacristies for clergy, choir and altar guild. At some future time the property immediately adjoining to the north is to be acquired, and on this property will be erected a parish house and rectory. The church will, therefore, be placed and designed with this future extension in view.

The church is to seat five hundred, the choir thirty. A small side chapel is optional.

The following points must be considered in the design:

- A. Frank and logical expression of the prescribed material.
- B. Historical and traditional associations of the institution for which the structure is provided.
- C. Historical and architectural antecedents, associations and surroundings of the assumed location.

Drawings required:

A plan at a scale of 16 feet to the inch, a front elevation and a side elevation at a scale of 8 feet to the inch, all on one sheet, and a sheet of details at a scale of one-half inch to the foot. The size of each sheet shall be exactly 24 inches by 32 inches. The sheets are not to be mounted. All drawings are to be in black ink, without wash or color, except that the walls on the plan are to be blacked in.

The exterior of the building is to be designed entirely in terra-cotta, and the same material may be used at will in the interior. Colored terra-cotta, or faience, may be employed.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra-cotta. There is no limitation of cost, but the designs must be suitable for the location, for the character of the building, and for the material in which it is to be executed. The details should indicate in a general manner the jointing of the terra-cotta and the sizes of the blocks.

In awarding the prizes, the intelligence shown in the constructive use of terra-cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

Every set of drawings is to be signed by a nom de plume or device, and accompanying same is to be a sealed envelope with the nom de plume on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 15, 1904.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names, ten cents in stamps.

The designs will be judged by three well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of \$500.

For the design placed second a prize of \$200.

For the design placed third a prize of \$100.

REPORT

OF THE

JURY OF AWARD.

THE Jury of Award wish to commend the competitors for an excellent series of designs submitted in competition, and especially to commend the sheets of details, which in many cases were admirable in design and rendering.

The following considerations influenced the decision, apart from general merit of plan and mass: First, manifest terra-cotta treatment of materials; second, expression of a village church rather than of a church for a large community.

A very considerable number of the designs were essentially adapted to stone, and had been changed to terra-cotta in material only, not in specific treatment, and an equally considerable number were more allied in type to a church for a large community rather than to a village church. Especially was this the case with the designs in which a Classic or Gregorian type of architecture was adopted.

The plans were judged for their general more than for their specific merit; that is, failure to thoroughly comprehend details of ecclesiastical service was not deemed fatal if the plan was otherwise an able one.

The diagonal approach and seven per cent grade were considered in relation to the position and effect of the masses of the body of the church and tower.

FIRST PRIZE (pages 4 and 5). The design is one for a village church, unmistakably of terra-cotta, with excellent details. The plan is simple, well arranged, the proportions of exterior openings express changes in plan, the tower is well placed and proportioned to the mass of the church. The objection to the plan is the irregularity of the piers supporting the clerestory caused by the penetration of the tower into the aisle, which however could be readily adjusted. The buttresses are well treated, and the fenestration is good and well contrasted with wall surfaces.

The porch and window opposite the chancel are especially well designed, the arch treatment of this window being very effective. The variation of wall treatment by decorated headers is peculiarly suggestive of terra-cotta.

The termination of the tower could be improved both in its silhouette and in the horizontal course, which seems heavy.

SECOND PRIZE (pages 6 and 7). This design expressed terra-cotta treatment better than any other in the series, and is manifestly a village church, but there are serious objections to its masses both in plan and ensemble. The tower is well placed, but is too low, the cubical mass of the aisle portion does not compare well with the mass of the church, and

the plan is badly broken at the chancel end. It was the admirable detail sheet and the feeling of terra-cotta which placed this design high, despite a general heaviness of mass.

THIRD PRIZE (pages 8 and 9). As far as plan, proportion and artistic quality are concerned, this is the best design presented, but it is hardly a village church. In all other respects this design is to be most highly commended, in plan, masses, position of tower, composition and details. It required a certain sense of justice to the other competitors on the part of the jury to place this design third, and the fact that it was premiated despite its size indicates its superiority to all others of its class.

FIRST MENTION (pages 10 and 11). A well proportioned, well planned design, with good masses and tower well placed, details and fenestration excellent. This design, in common with others, has a certain lack of termination in the tops of the towers and buttresses, and also lacks wall surface at the ends of the series of large nave windows. It would have made a marked improvement in the design if the windows nearest the ends of the church had been made smaller than the others.

SECOND MENTION (pages 12 and 13). With good scheme of plan, but eccentricities of minor parts which would compose badly in perspective. Strong accent of vertical motives and well placed and well handled detail. The fenestration is peculiarly ingenious.

THIRD MENTION (pages 14 and 15). A pronounced "Beaux Arts" design, with the virtues and faults of the type, but excellent of its kind. Admirable plan and proportions of nave wall and openings. Nave would seem very thin on end. Tower with interesting termination. No character whatever, traditional or otherwise, of a church in the design, but it would make a very handsomely proportioned façade for a civic hall. Detail sheet extremely well rendered.

MENTION (pages 16 and 17). Well planned, well massed church. Top of tower is especially well handled and effective. Detail sheet admirably drawn.

MENTION (pages 18 and 19). Well planned, well massed church, well detailed and fenestrated, but of not so great interest as others of its type.

MENTION (pages 20 and 21). Small cathedral, rather dry and uninteresting with harsh fenestration.

MENTION (pages 22 and 23). A peculiar adaptation of a transepted plan with piers and aisles omitted, extremely difficult to treat successfully

where tower penetrates mass. Tower seems too large for church. Otherwise excellent church, with admirable grouping of detail, of fenestration and parapet.

DESIGN (page 24). A most remarkably consistent apotheosis of parallel bands and rectangular masses. Embryonic architecture, very harmonious from the unanimity of its factors, and very childlike in its lack of development. Ingeniously worked out and well rendered.

DESIGN (page 25). Gregorian type, with consequent clumsy detail, plan not especially good. Poor transition between solids of tower. Bad relative proportion of transept and nave windows. Thin porch.

DESIGN (page 26). Gregorian, the best of the Gregorian designs, with very excellent side façade skillfully proportioned. Porch would seem light for the mass behind as plan indicates. Zones of tower not as well relatively proportioned as the remainder of building.

DESIGN (page 27). Gregorian, poor plan, uninteresting side elevation. Detail of clock zone to tower seems heavy for modillioned cornice below.

DESIGN (page 28). Church of good proportions, of stone in character. The scheme of carrying the columns around the base of the tower as a peristyle seems unjustified by the plan.

DESIGN (page 29). A Spanish or Mexican type, best expressed with white plastered wall. Tower invades the church floor. Decoration around end window seems excessive.

DESIGN (page 30). Has interesting portions and details. The Giralda-like tower needs greater height, the belfries would seem thin on edge. The roof of the side porch would make an awkward termination for the colonnade, and the colonnade itself seems gratuitous. The entrance and gable motive could be made very effective.

DESIGN (page 31). Mission type, well proportioned and detailed. Dome relation to nave and transept difficult of treatment and not sufficiently explained on plan and elevation.

DESIGN (page 32). Uninteresting French Modern Romanesque, not well planned, with lantern too small for tower.

DESIGN (page 33). Over-rendered and over-detailed, chamfered tower coarse in scale. Masses of chapel group badly about the apse with its flying buttresses, which latter seem hardly justified by the weight they are called upon to carry.

DESIGN (page 34). Poor plan. Thin Romanesque, with constructive solids poorly related to each other. Tower not well placed.

DESIGN (page 35). Consistent and interesting, essentially a village church in terra-cotta. Tower badly placed. Well rendered.

DESIGN (page 36). Romanesque. Gable and flanking towers not well related, windows in chancel end badly proportioned with wall masses.

DESIGN (page 37). Elaborate Italian Roman-

esque. Tower poorly placed. Wall areas and openings not well proportioned.

DESIGN (page 38). Undoubtedly a village church, but with too many and various motives.

DESIGN (page 39). Plastic. Has much merit. The tower especially is very good.

DESIGN (page 40). Excellent front, well placed detail and good fenestration.

DESIGN (page 41). Good mass. Comparatively uninteresting design.

DESIGN (page 42). Exterior admirably expresses plan. Type is that of a stone church.

DESIGN (page 43). Masses on either side of tower not well balanced. Well rendered design, with wall surface somewhat too equally ornamented, producing lack of contrast.

DESIGN (page 44). A small cathedral with no plain surfaces, over-decorated.

DESIGN (page 45). Size of transept window too large for slight projection of transept and for other fenestrations. Over-decorated.

DESIGN (page 46). Exterior well expresses plan. Good tower. This design, with several others already commended, has distinct merit but is not equal to others of its type.

DESIGN (page 47). Poor relative proportions of masses, especially in the scale of chancel to mass of church. Fenestration restless.

DESIGN (page 48). A village church, but with harsh and heavy detail.

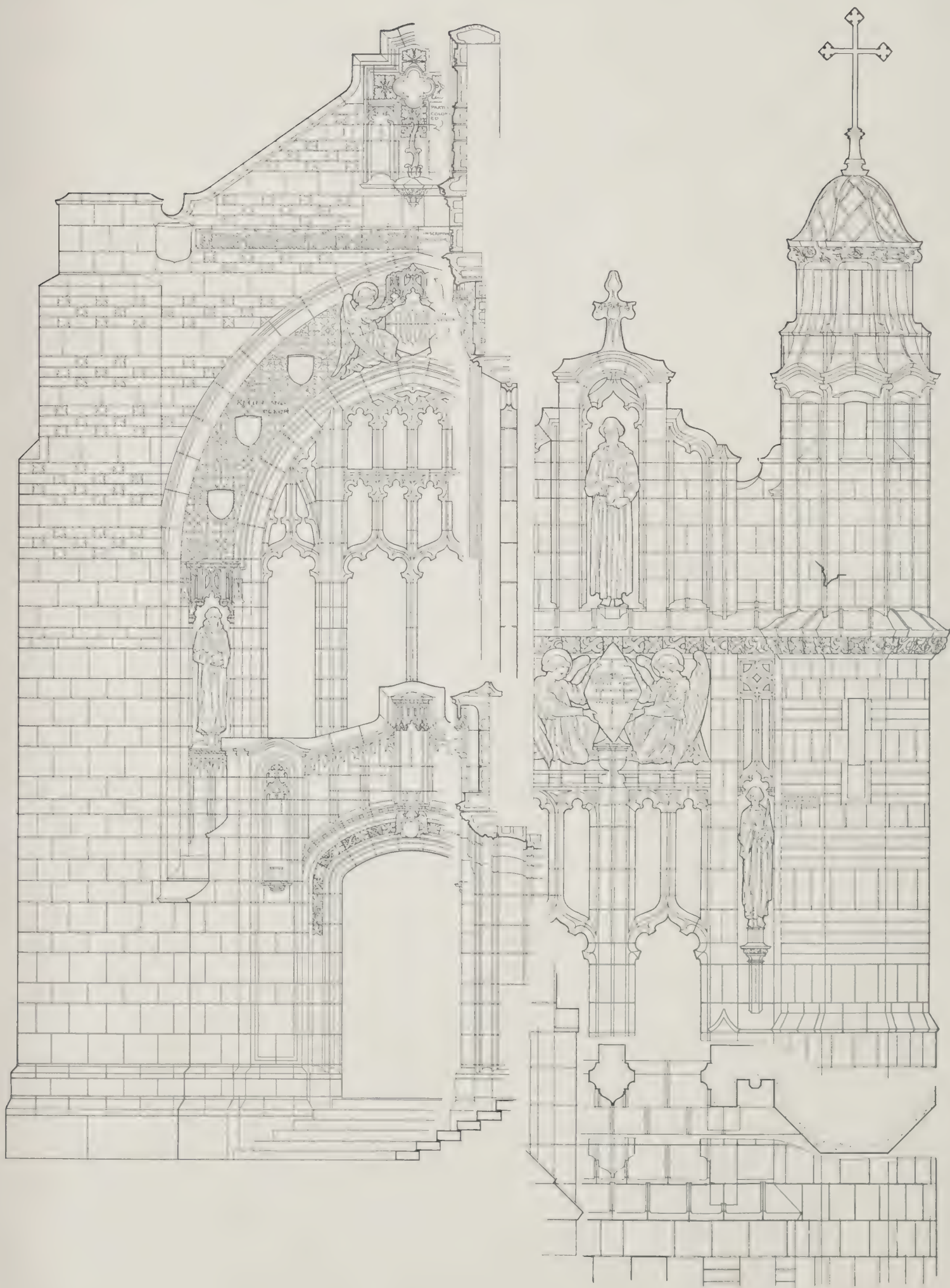
DESIGN (page 49). Peculiar and not successful tower, seemingly without termination. Poorly proportioned window over entrance.

DESIGN (page 50). Planned and rendered with certain architectural knowledge, but bizarre in design and exceedingly restless in sky line.

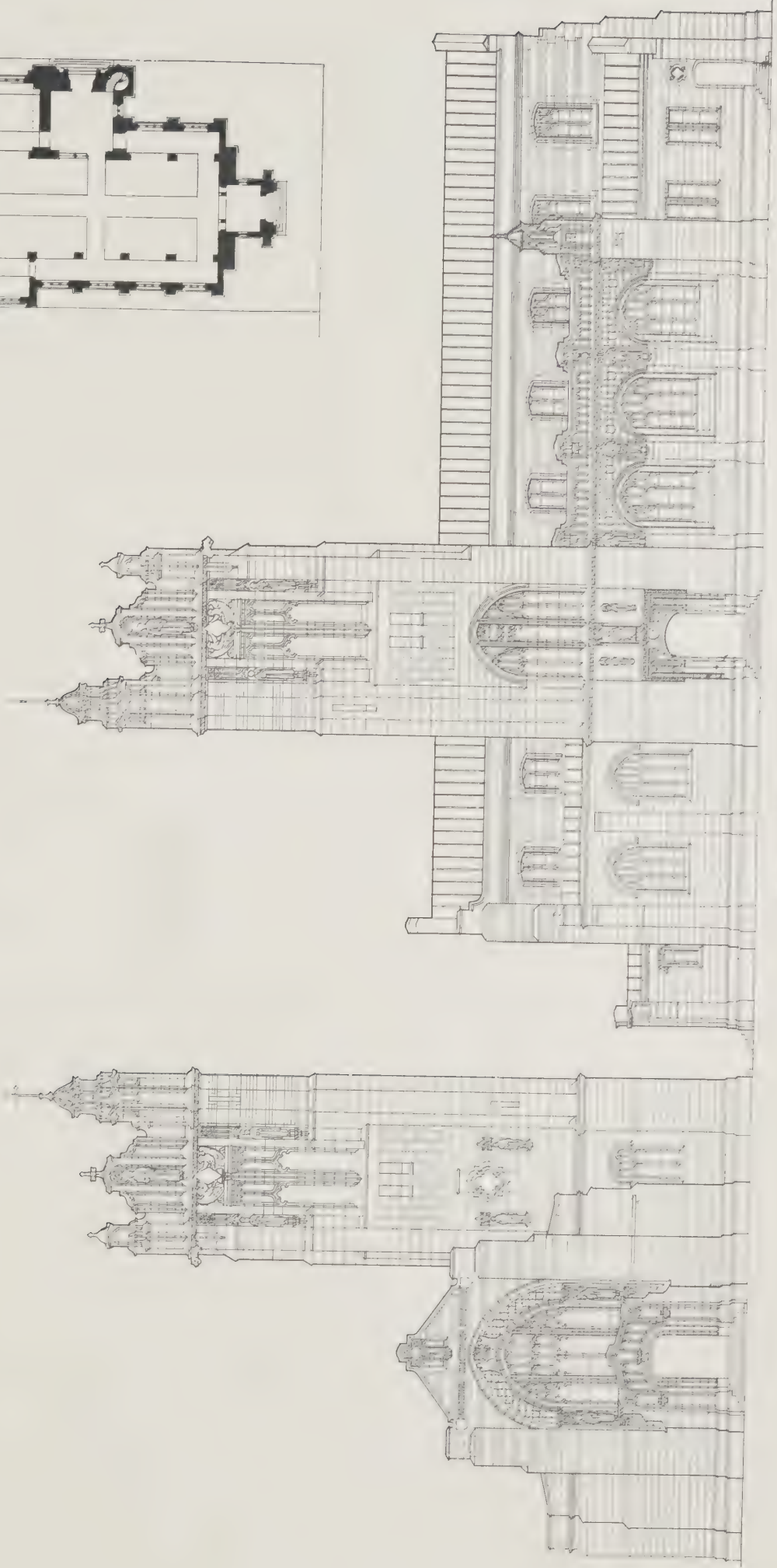
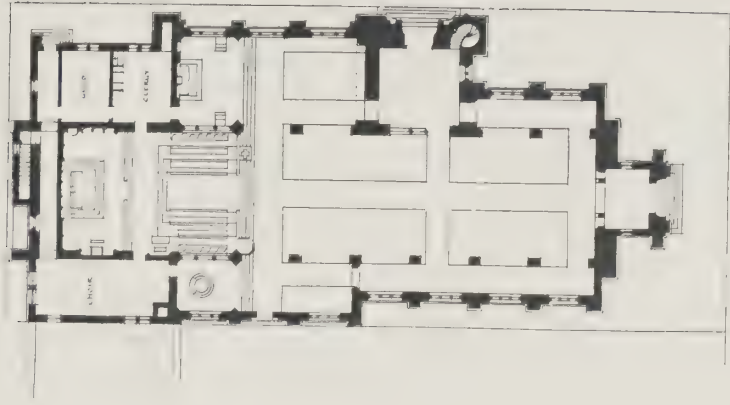
DESIGN (page 51). A reminiscence of Wrexham, with the faulty fenestration of the tower.

It will be seen from the criticisms, which are intended merely to suggest possible improvements in the designs, that there were many designs of nearly equal merit and that very slight differences caused some to be placed ahead of others. These differences were found in the general proportions of masses and of windows to walls and to each other, in contrasts of details with surfaces and in skill in the detail sheets. It will also be noticed that the majority of the presented designs are Gothic in type, which is to be expected from tradition and from the natural picturesqueness suggested by a hilly village site; but on the other hand there were no so-called Colonial types of design presented, and no very excellent ones of the types suggested by the brick and terra-cotta of Northern Italy. The Gothic types were the best presented. In this competition, as in many another, architectural precedent has influenced the designers more than it need to do, and it is still possible to imagine work less bound by precedent which would be premium compelling. The one example (Design, page 24) which approached the problem from this point of view was merely embryonic.

(The arrangement of plates following "Mentions" is not intended to indicate the order of merit of the designs.)



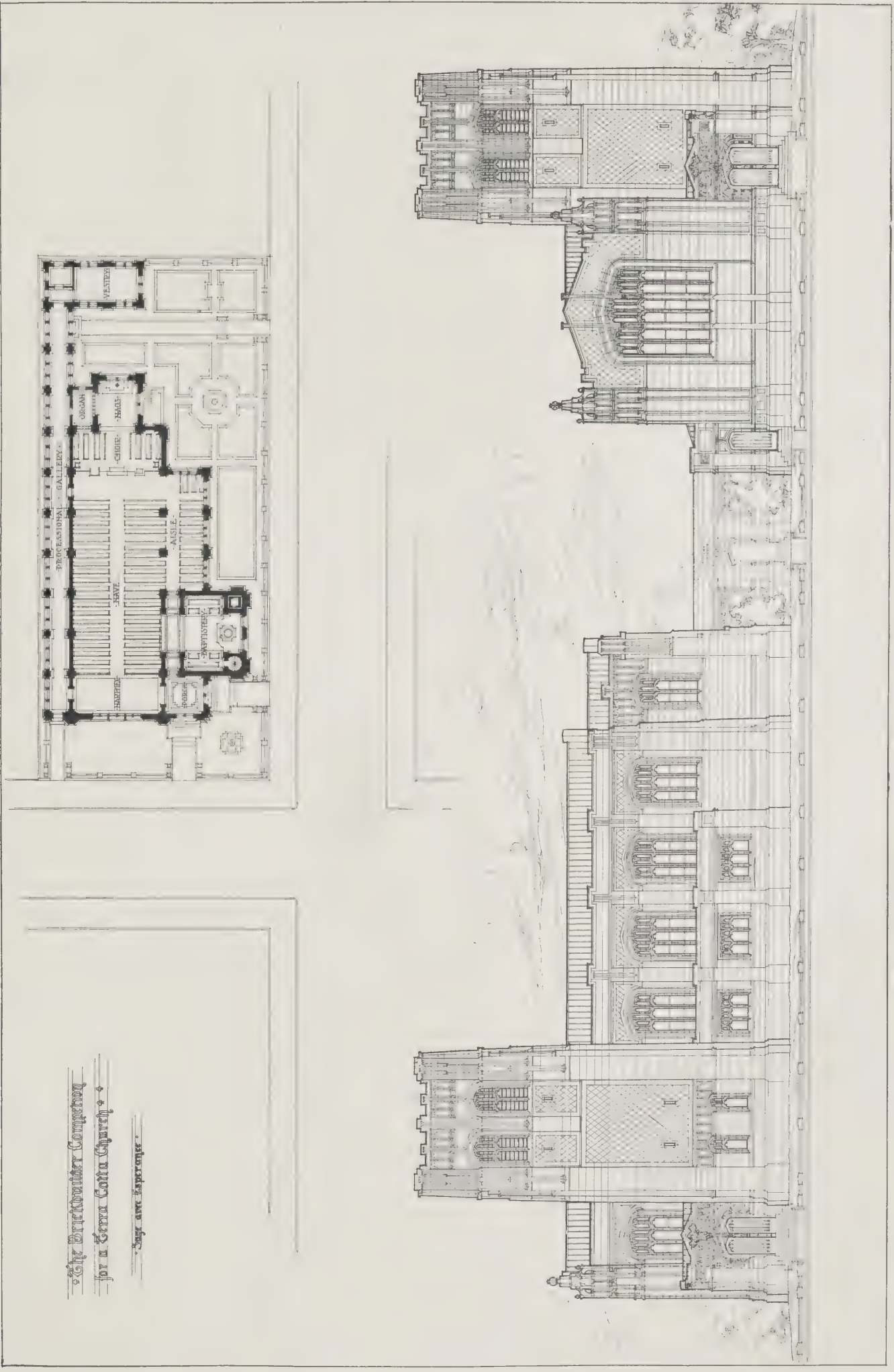
DETAIL BY ADDISON B. LE BOUTILLIER.



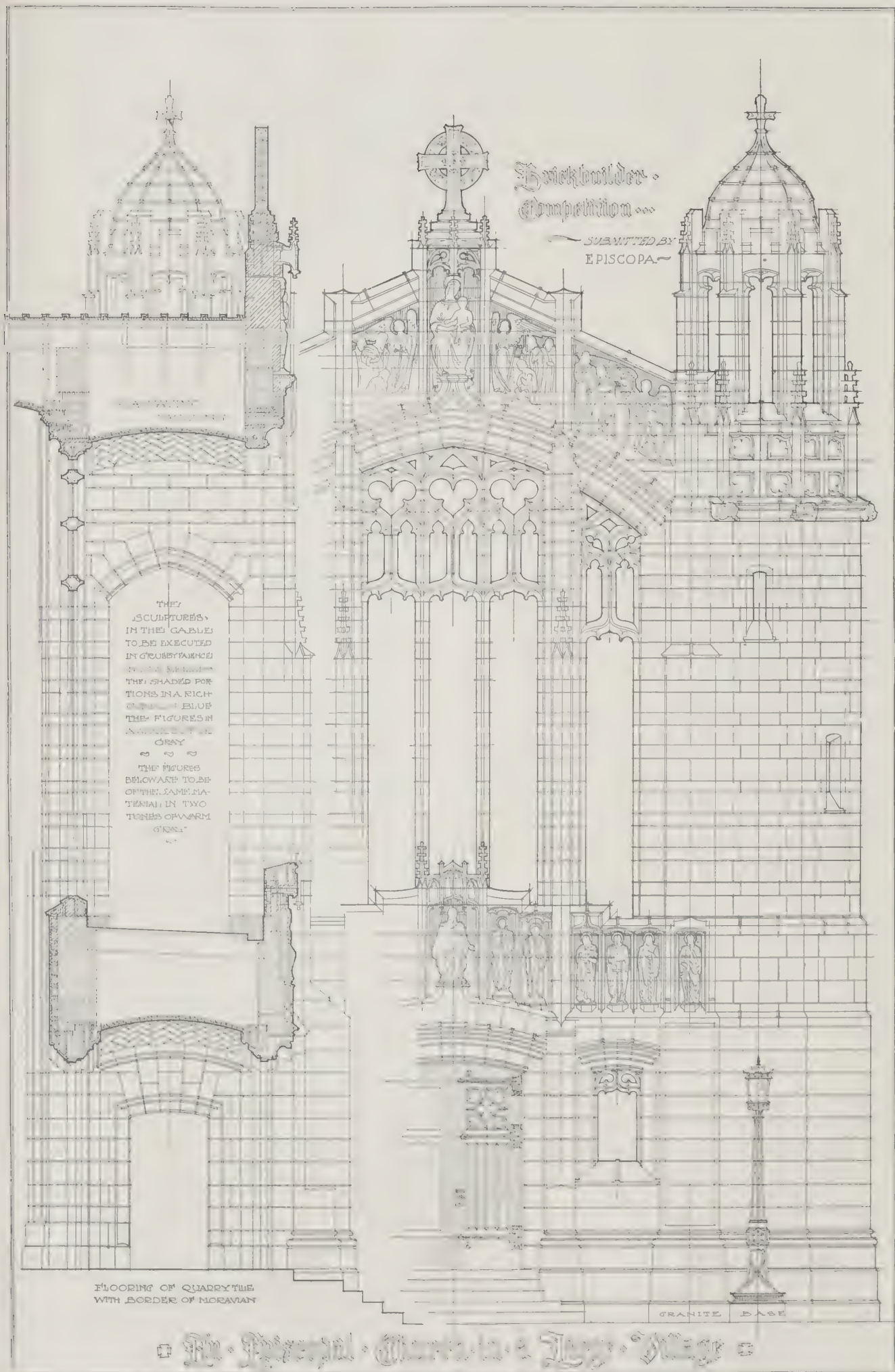
FIRST PRIZE DESIGN.
 SUBMITTED BY ADDISON B. LE BOUTILLIER, BOSTON, MASS.

The Brickbuilder Company
for a Terra Cotta Church

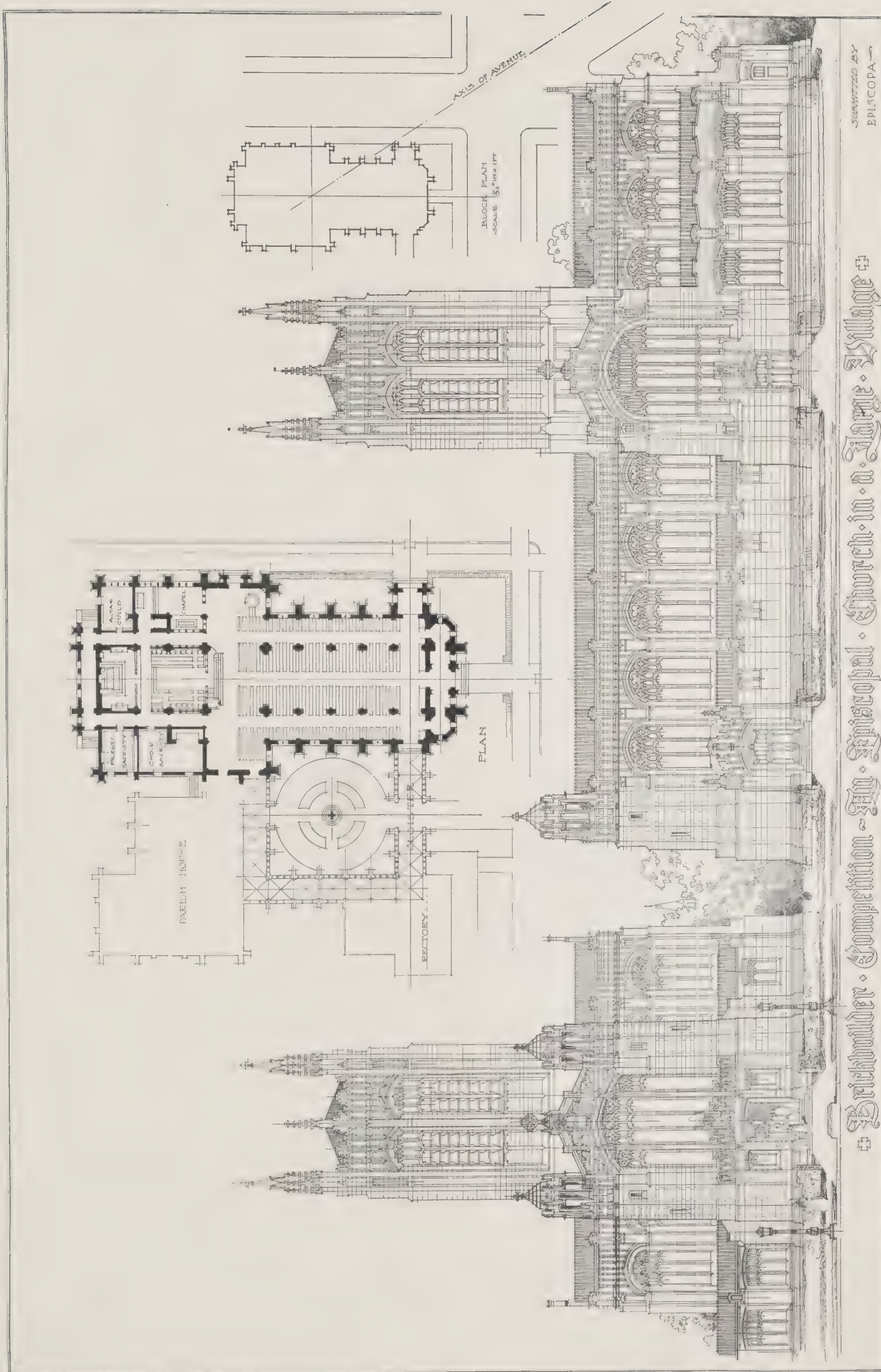
Long and Expensive



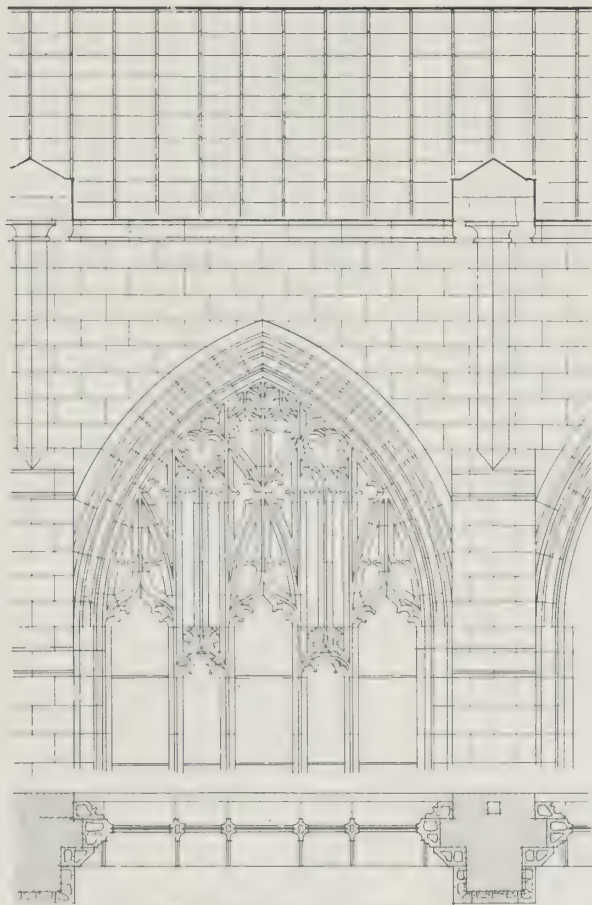
SECOND PRIZE DESIGN.
SUBMITTED BY AYMAR EMBURY, 2D, ENGLEWOOD, N. J.



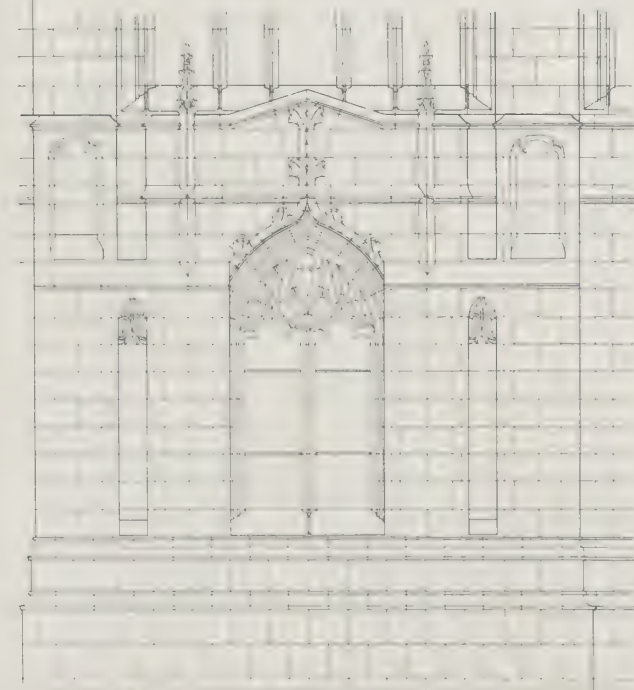
DETAIL BY E. DONALD ROBB.



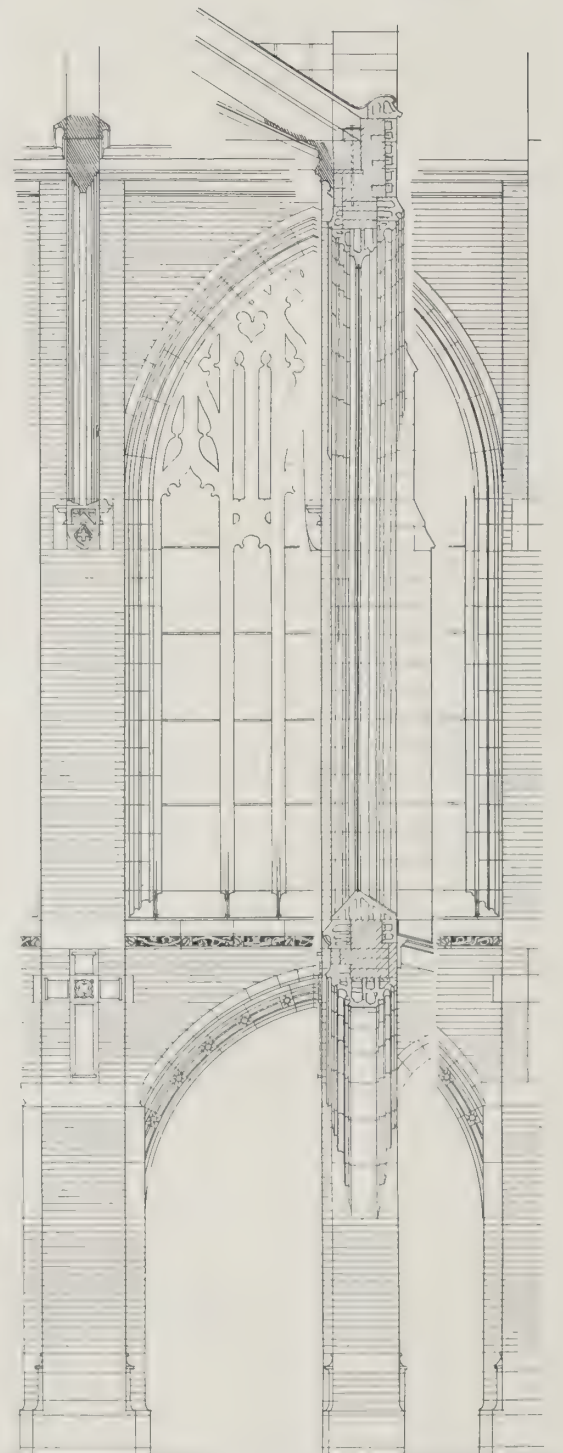
**THE BRICKBUILDER COMPETITION
FOR A LARGE VILLAGE CHURCH**
IN MATERIALS OF CLAY DECEMBER 1904



PLAN OF CLERESTORY WINDOW

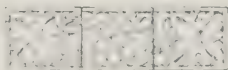


EXTERIOR ELEVATION OF ONE BAY
SHOWING BAPTISTERY



GRAY BRICK, WITH COLORED AND GLAZED TERRA COTTA

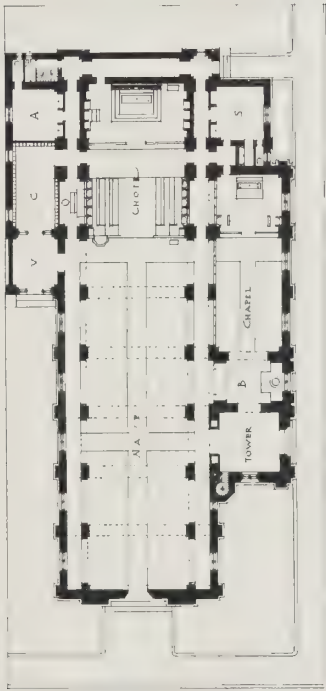
INTERIOR ELEVATION OF ONE BAY



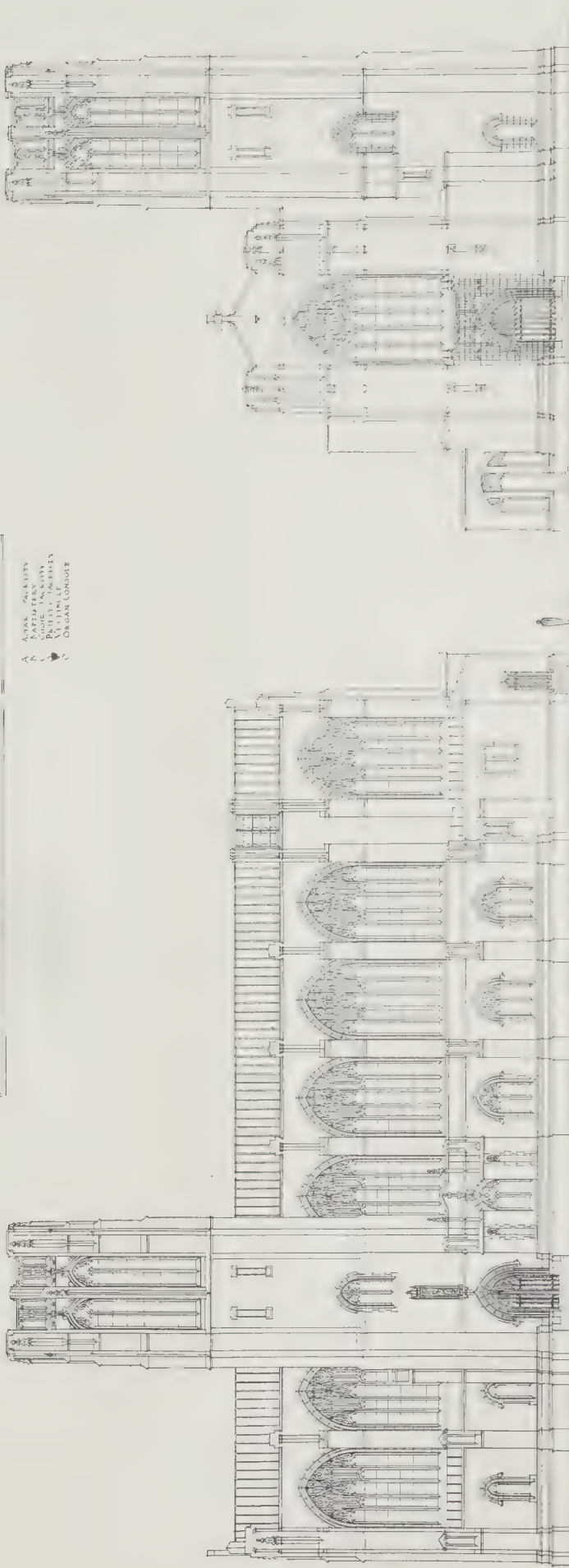
DETAIL BY GORDON ALLEN AND FRANK E. CLEVELAND.



THE BRICKBUILDER COMPETITION
FOR A LARGE VILLAGE CHURCH
IN MATERIALS OF CLAY



A. AVAIL. GALLERY
B. AVAIL. PARLOR
C. AVAIL. CHANCEL
D. AVAIL. TOWER
E. AVAIL. ORGAN LOBBY

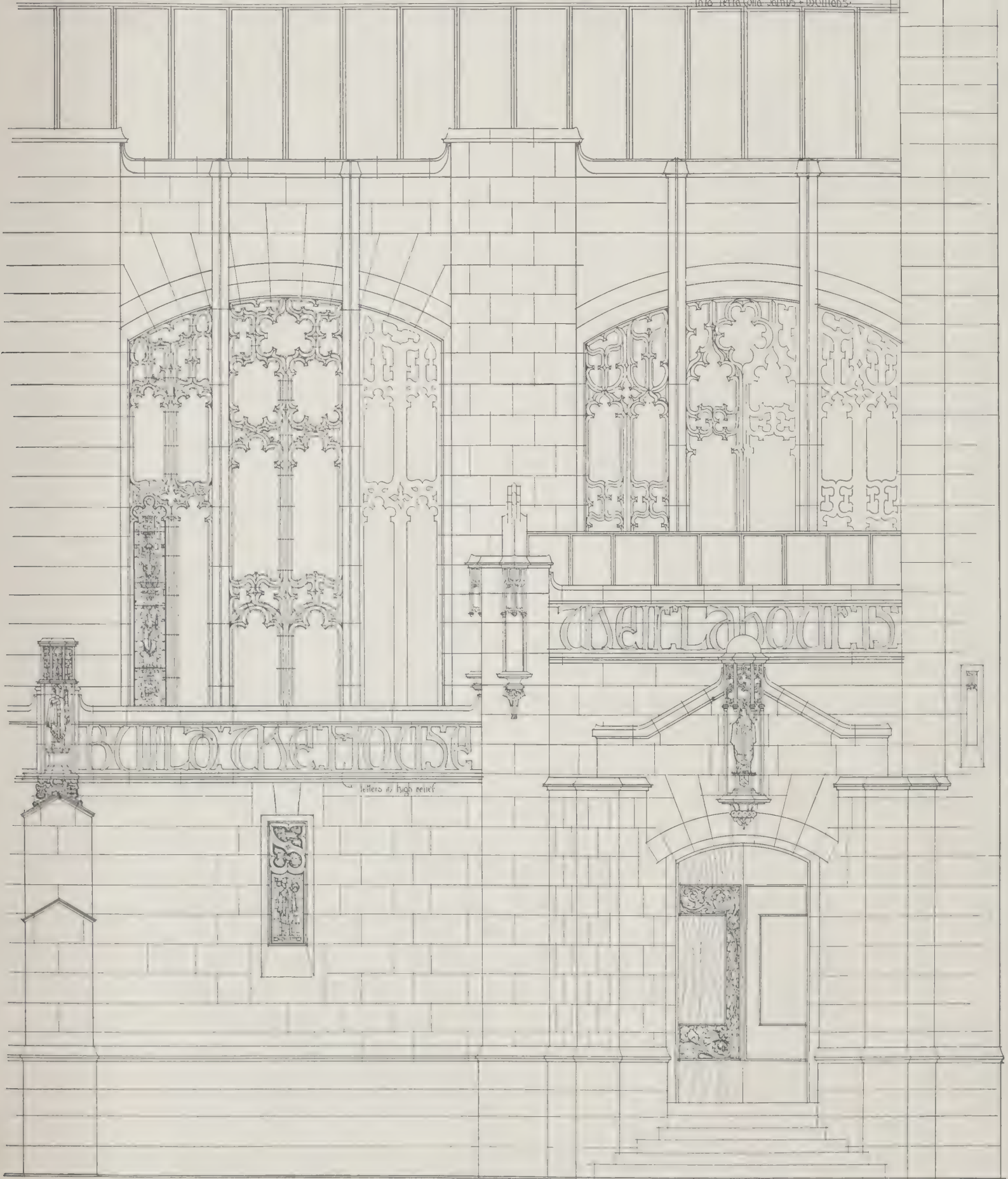


FIRST MENTION.
SUBMITTED BY GORDON ALLEN AND FRANK E. CLEVELAND, BOSTON, MASS.

Village Church of Terra Colla.
12th Century

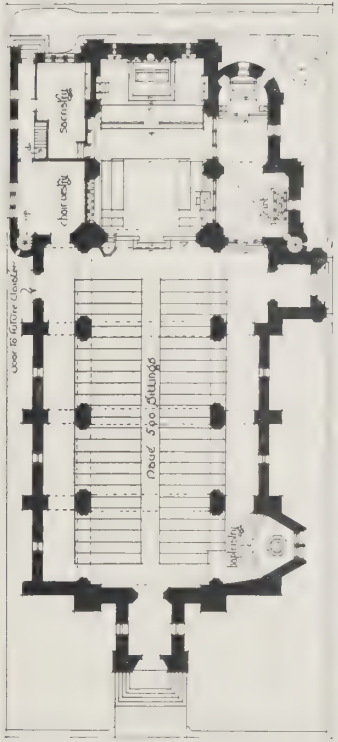
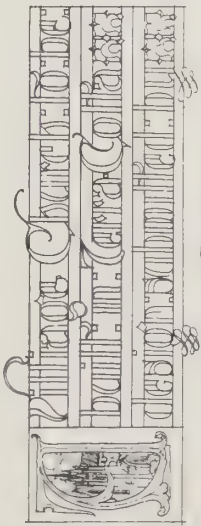


Note: Entire building Exterior + Interior to be of Terra
Colla: Tile floor + roof. Ceiling Vault covered by exterior
leadon roof: Choir + Chapel 2x 12x12x12: Glass leaded directly
into Terra Colla + masonry + bullions.

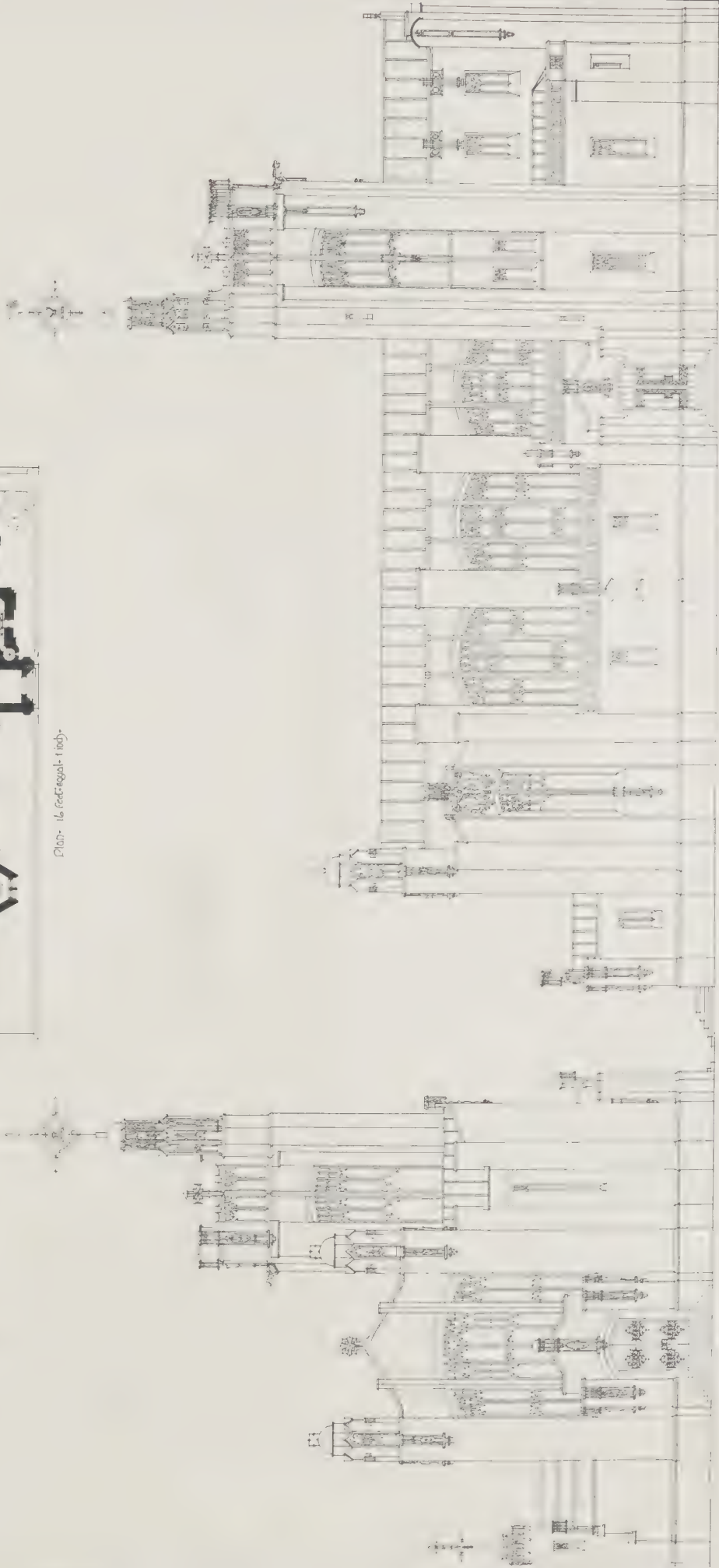


letters in high relief

DETAIL BY M. H. SMITH.



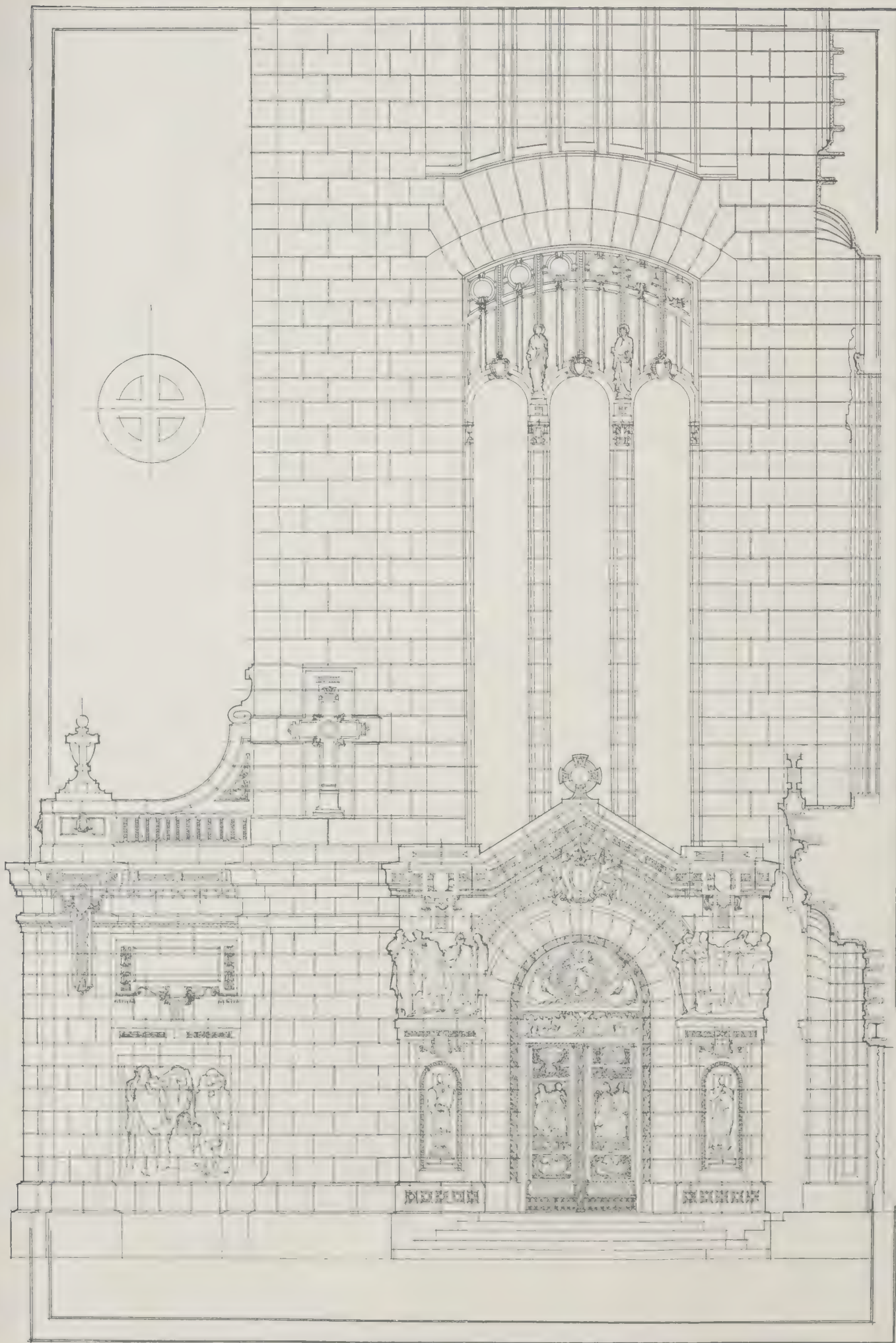
Plan - 1/4 inch = 1 foot



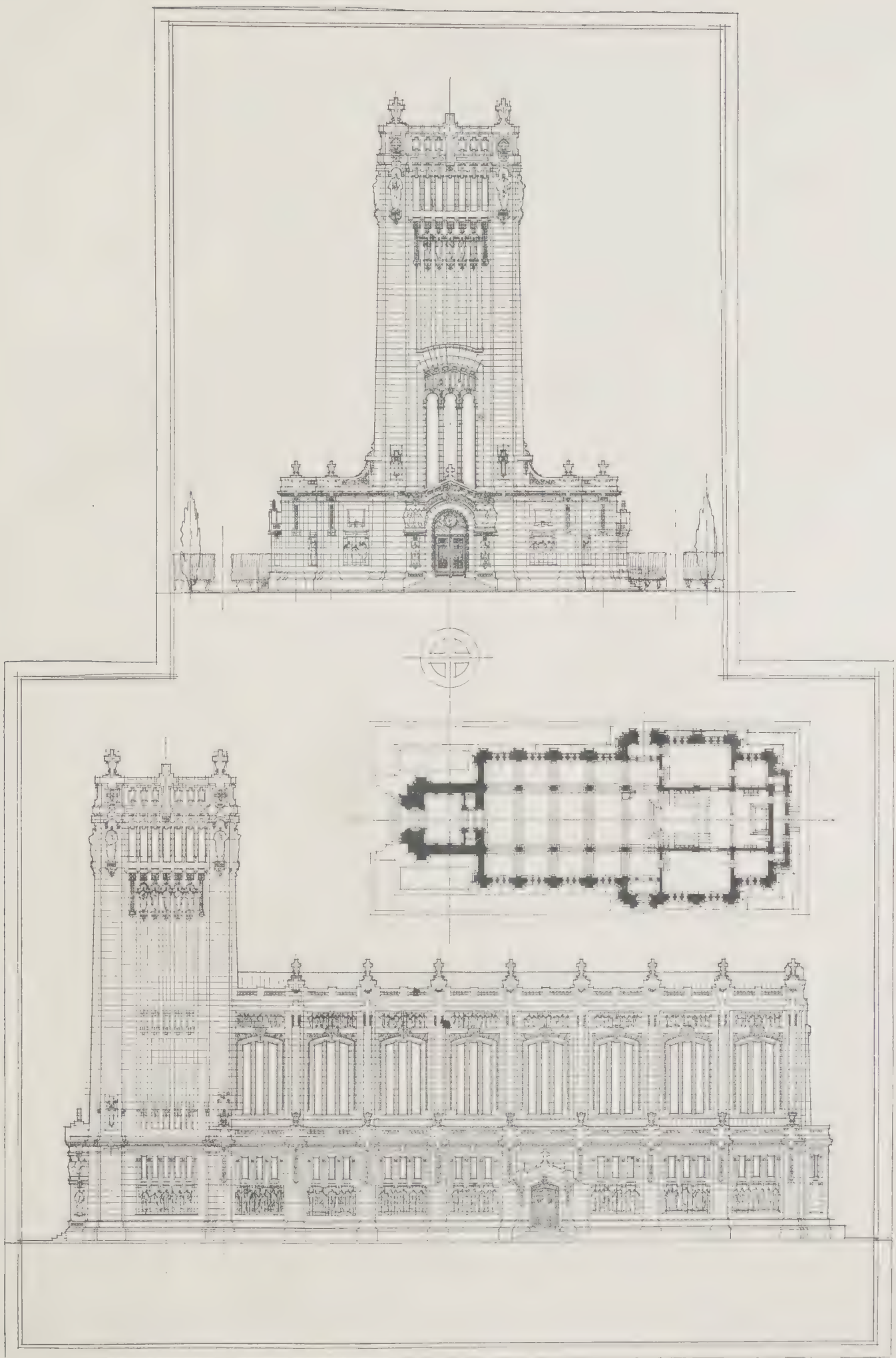
Front Elevation

Side Elevation

SECOND MENTION.
SUBMITTED BY M. H. SMITH, BOSTON, MASS.

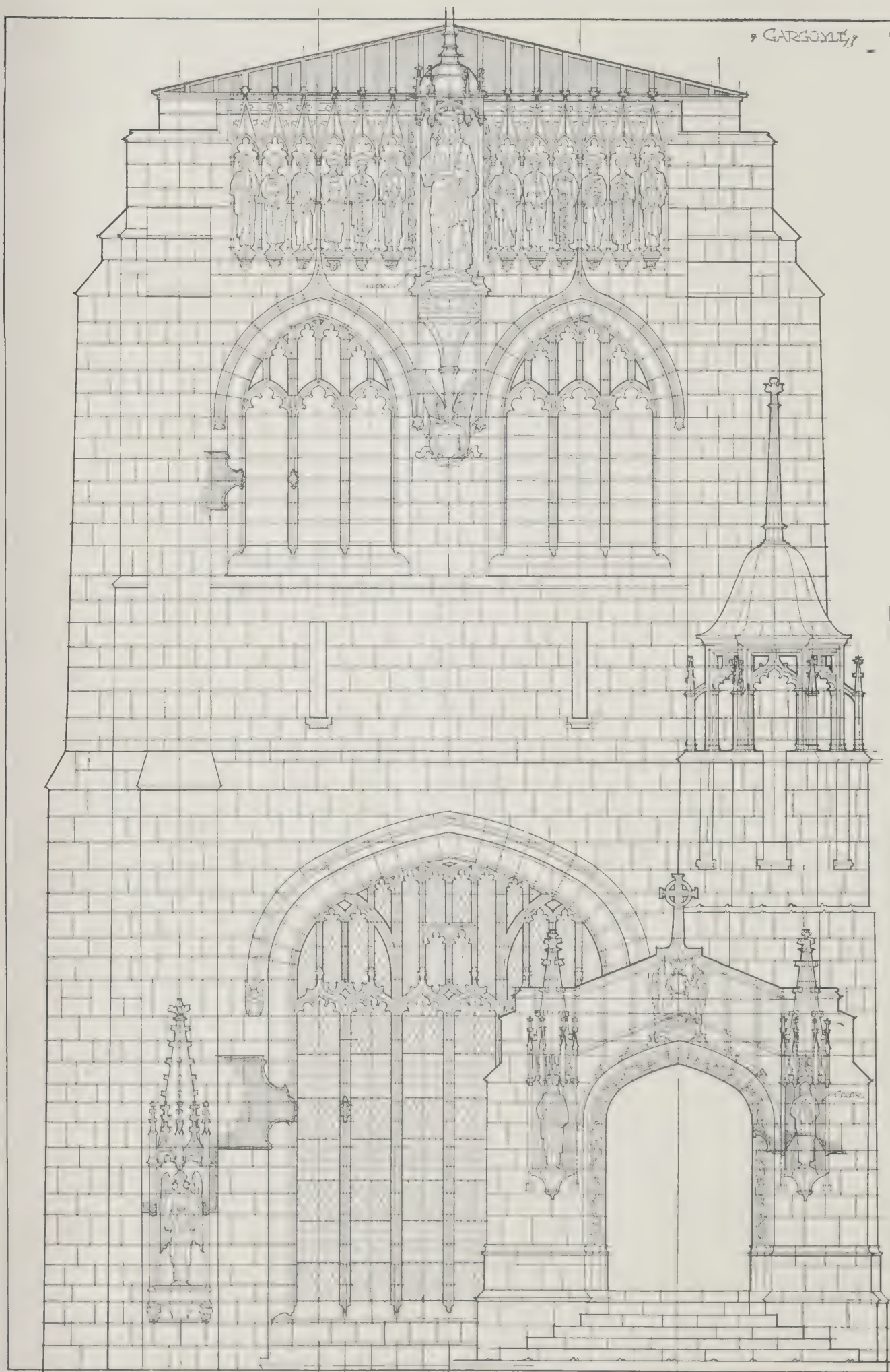


DETAIL BY HAROLD W. HATHAWAY AND WILLIAM S. WELLS.

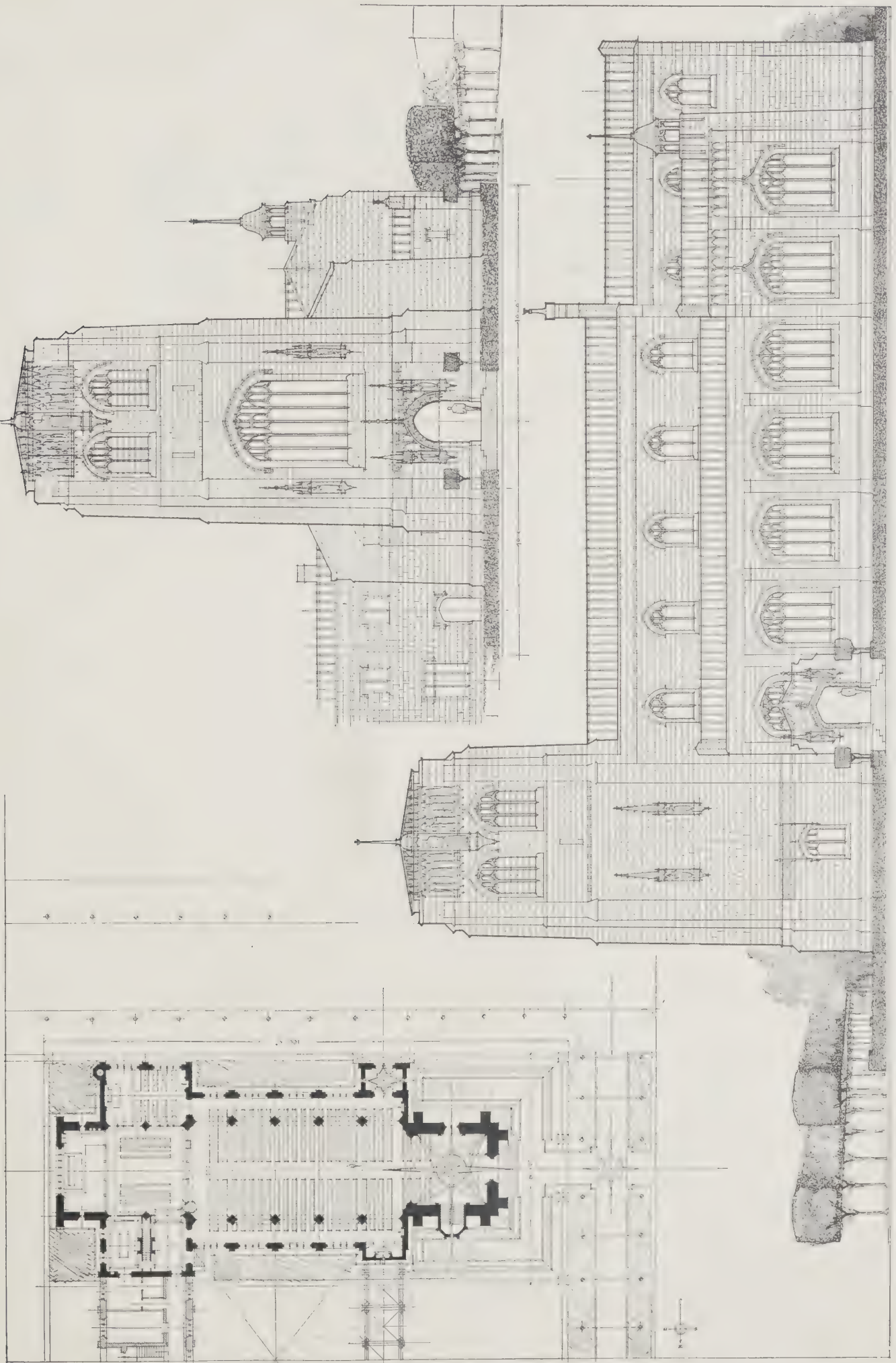


THIRD MENTION.

SUBMITTED BY HAROLD W. HATHAWAY AND WILLIAM S. WELLS, BOSTON, MASS.



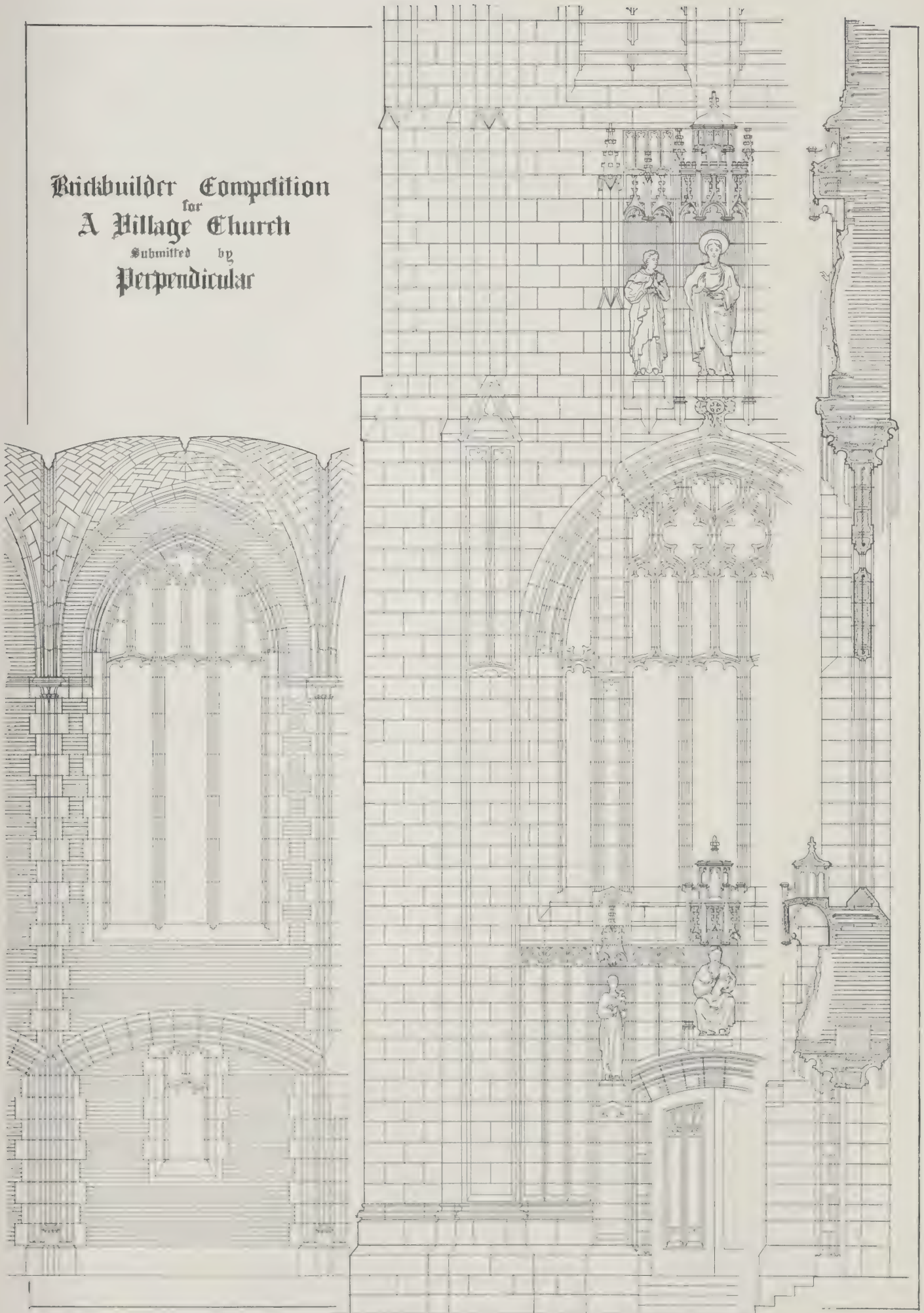
DETAIL BY WILLIAM L. WELTON.



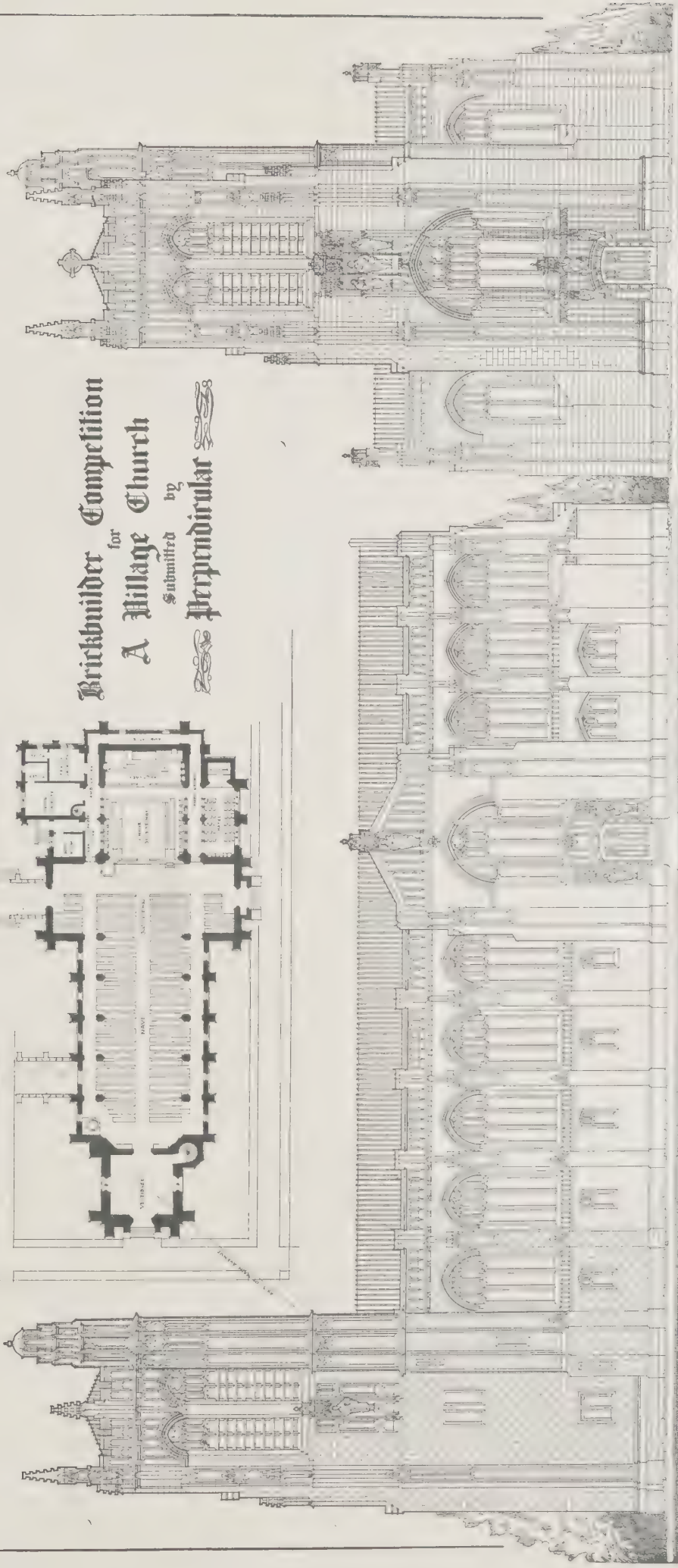
MENTION.

SUBMITTED BY WILLIAM L. WELTON, NEW YORK CITY.

Brickbuilder Competition
 for
 A Village Church
 Submitted by
 Perpendicular



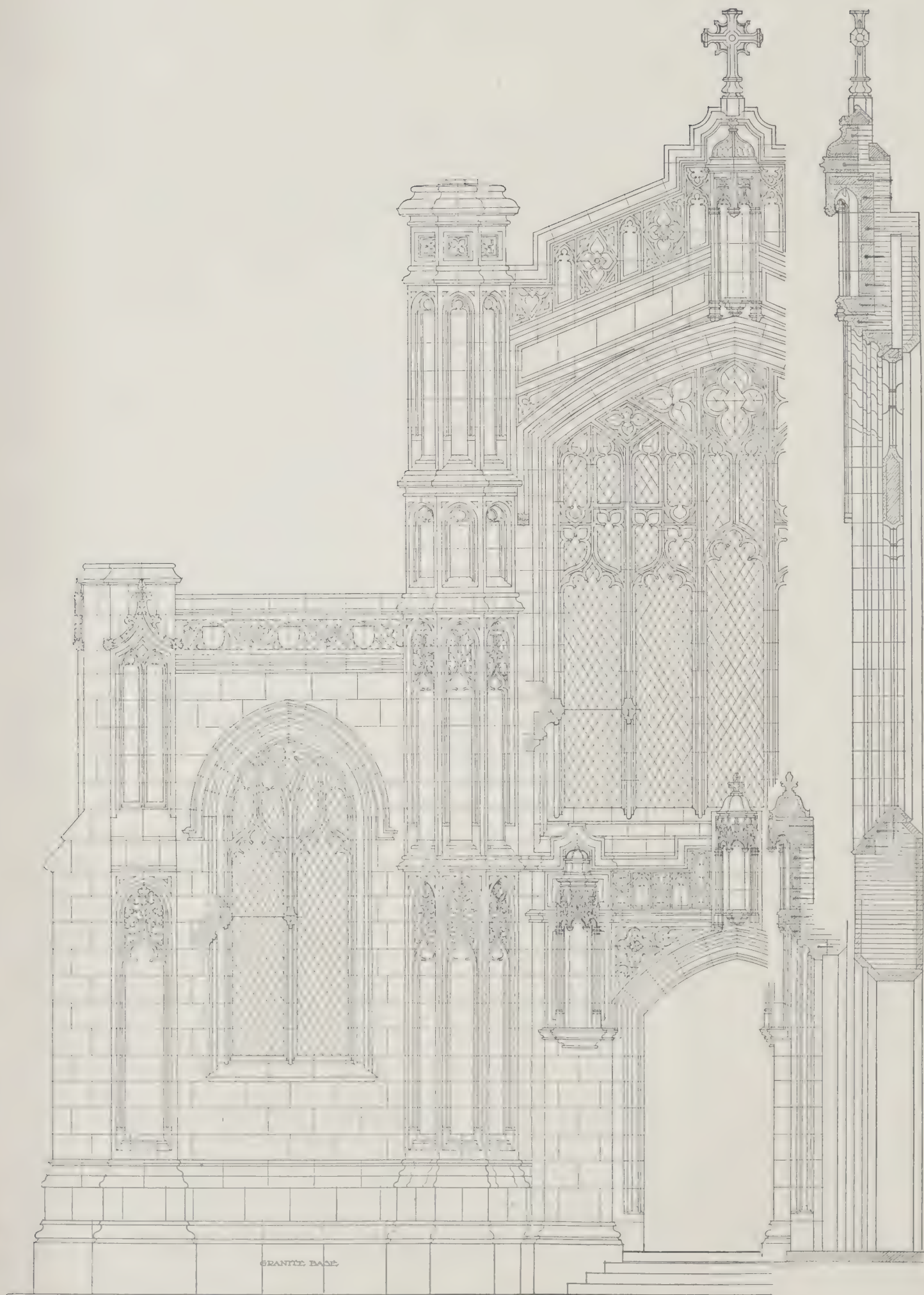
DETAIL BY RUSSELL EASON HART.



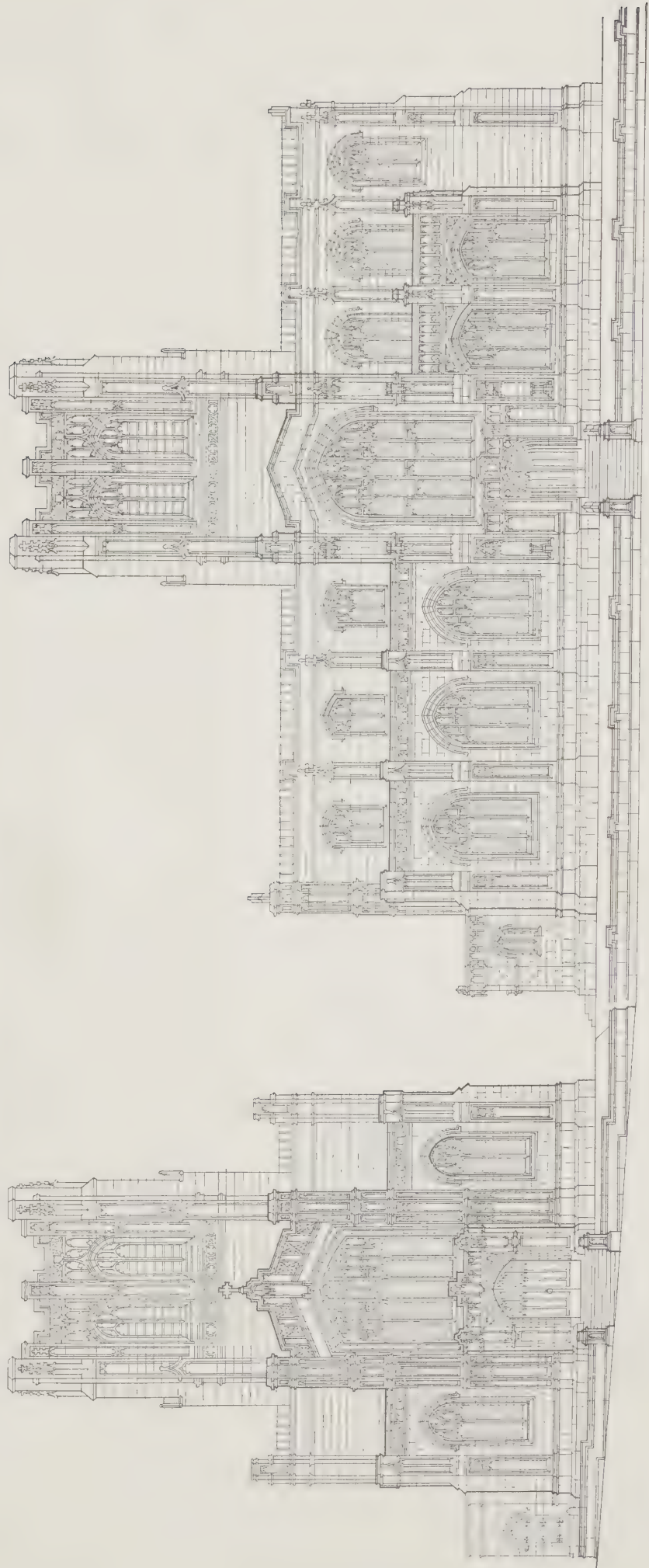
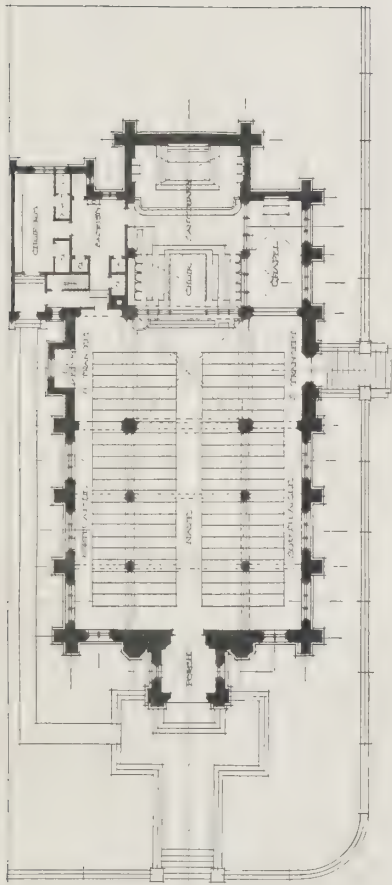
Brickbuilder Competition
for
A Village Church
Submitted by
Perpendicular

MENTION.

SUBMITTED BY RUSSELL EASON HART, NEW YORK CITY.

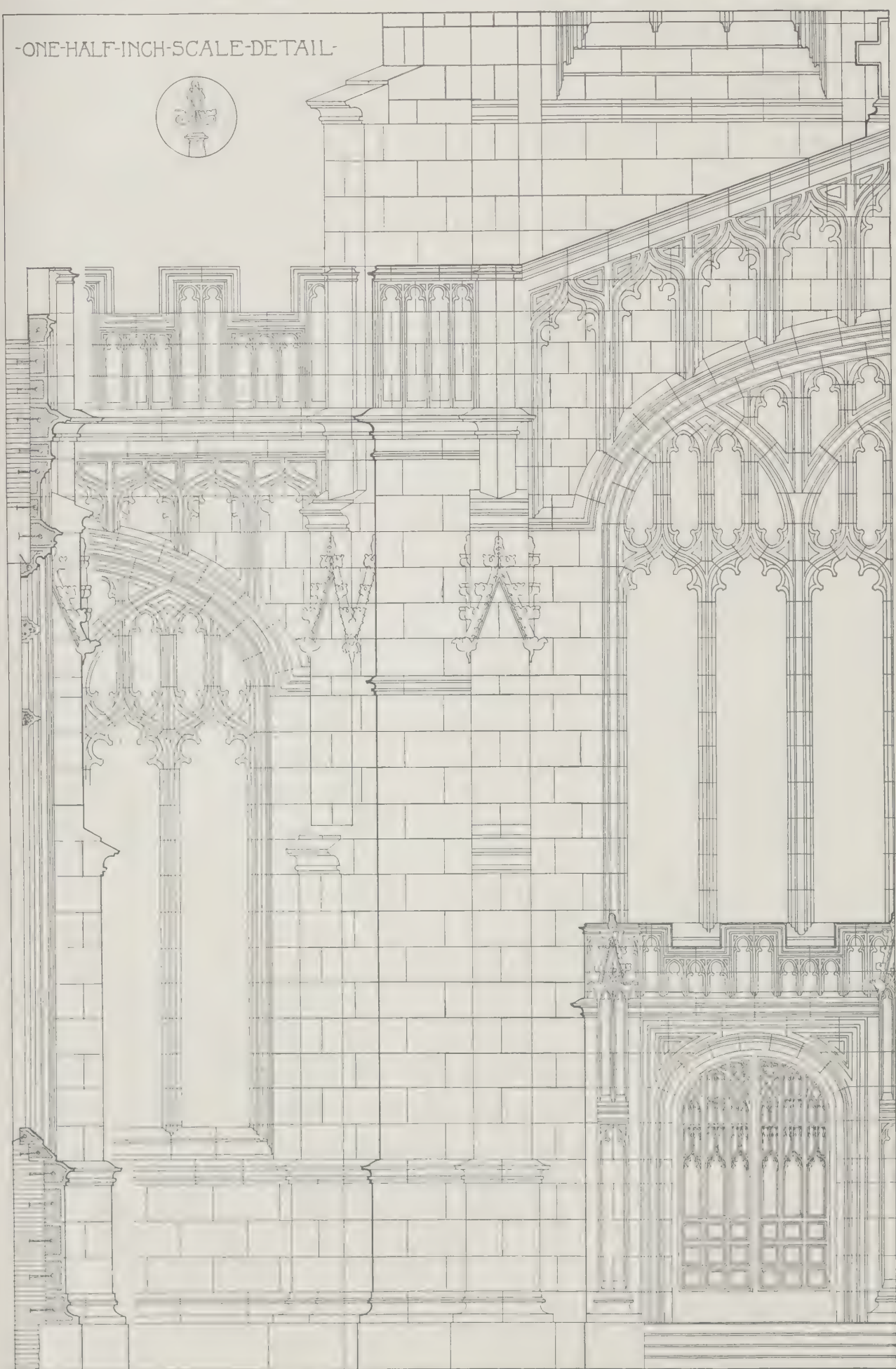


DETAIL BY AUGUST SIEDER, JR.

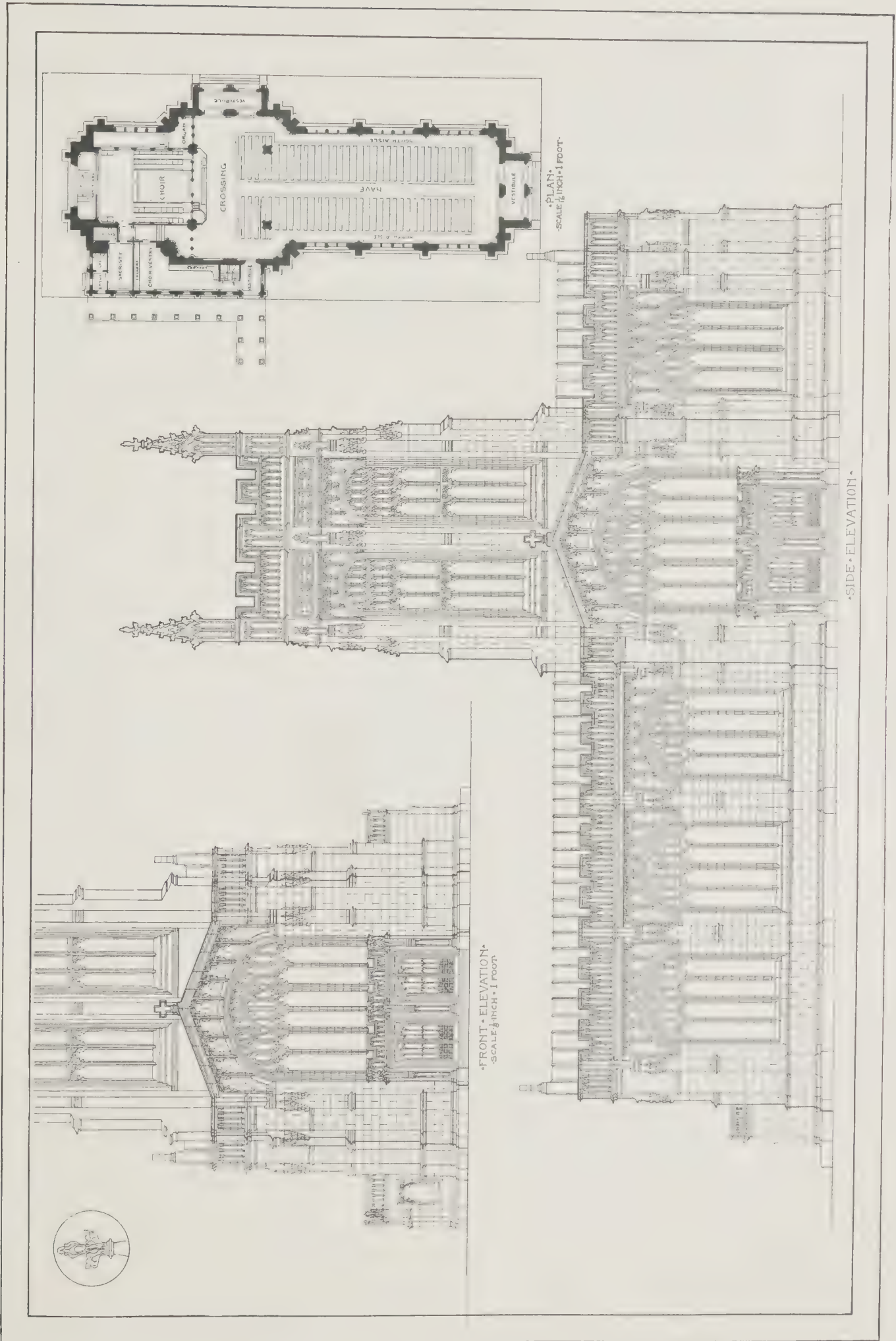


MENTION.
SUBMITTED BY AUGUST SIEDER, JR., NEW YORK CITY.

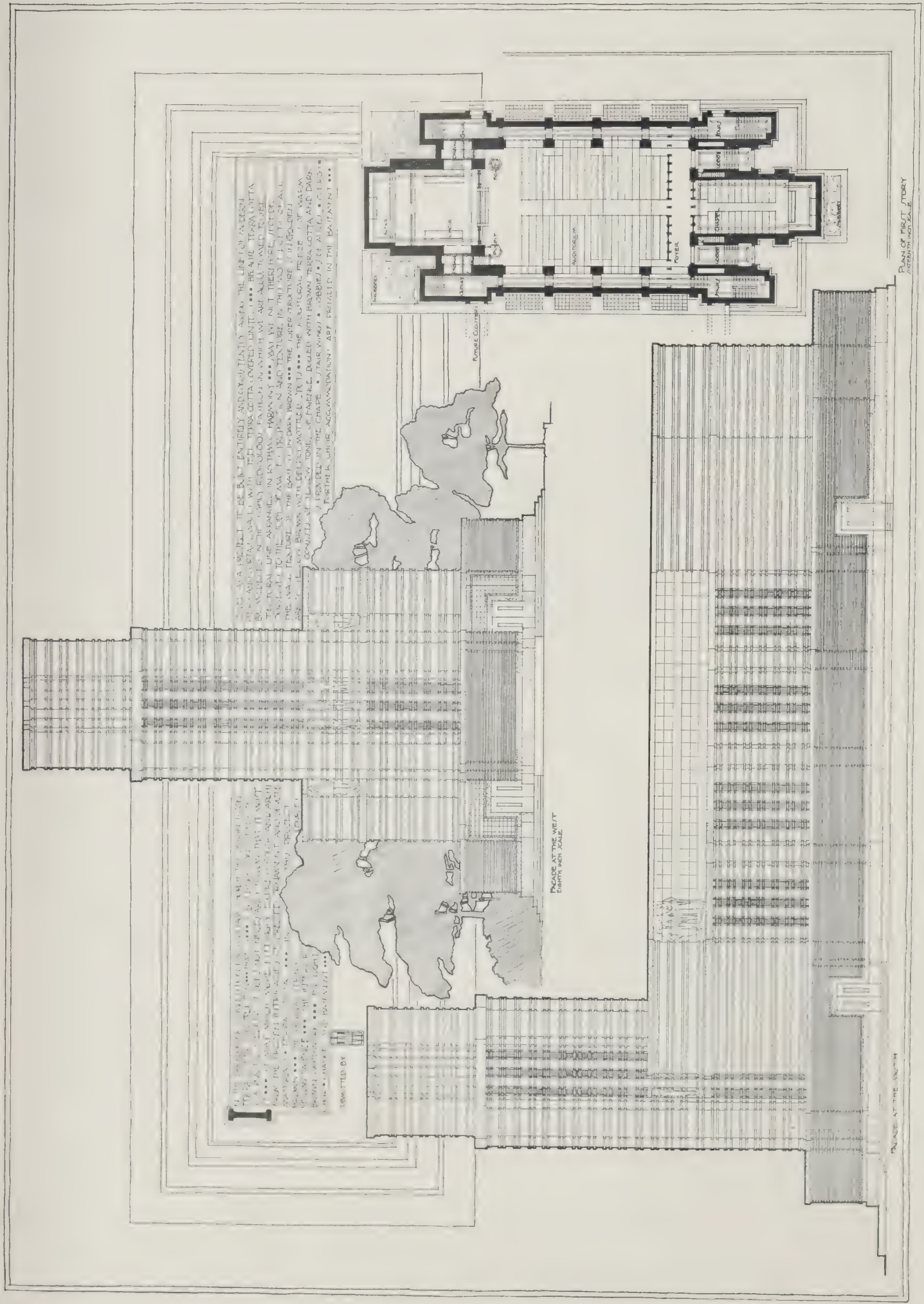
-ONE-HALF-INCH-SCALE-DETAIL-



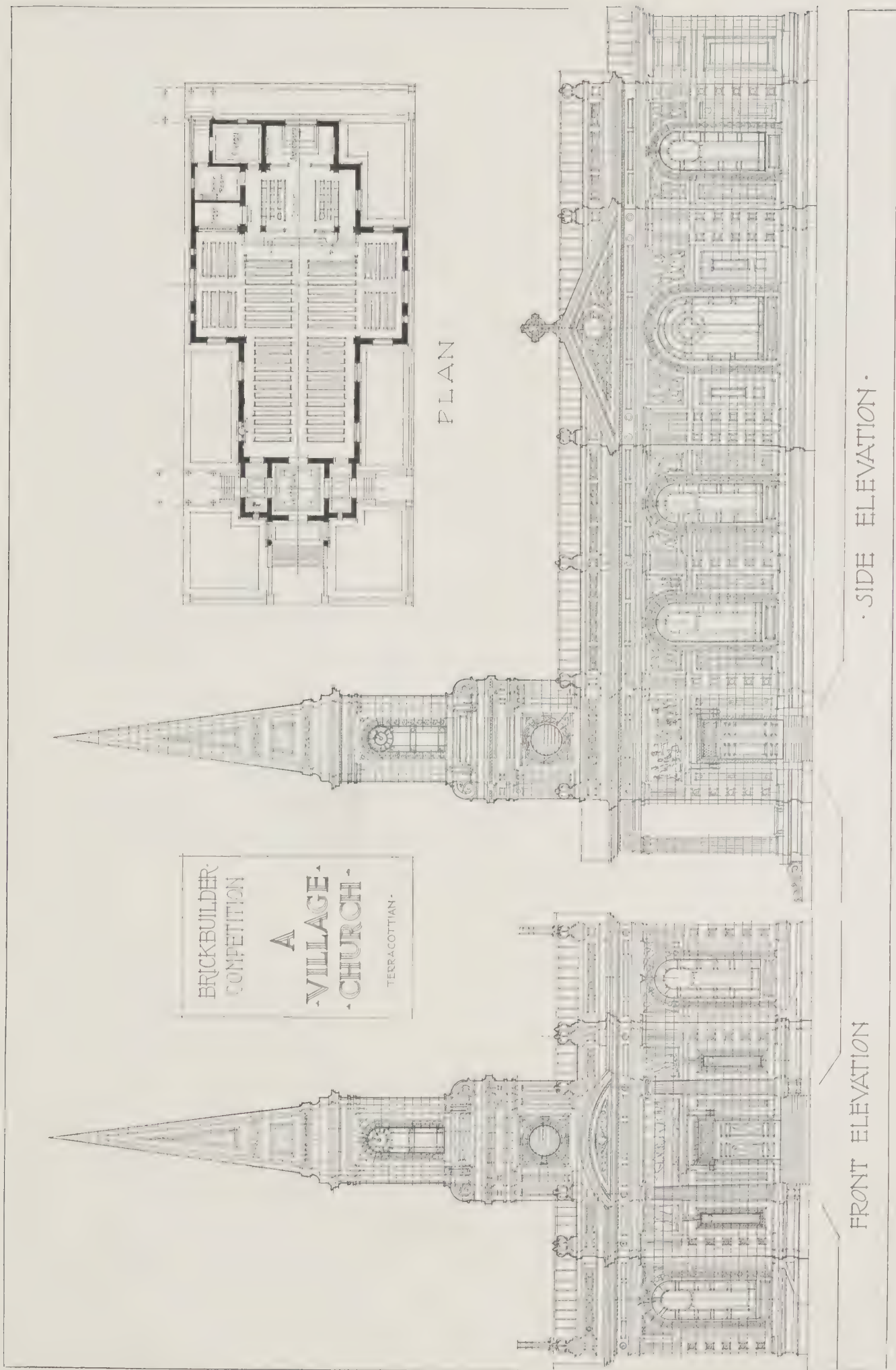
DETAIL BY ROBERT FOCKENS.



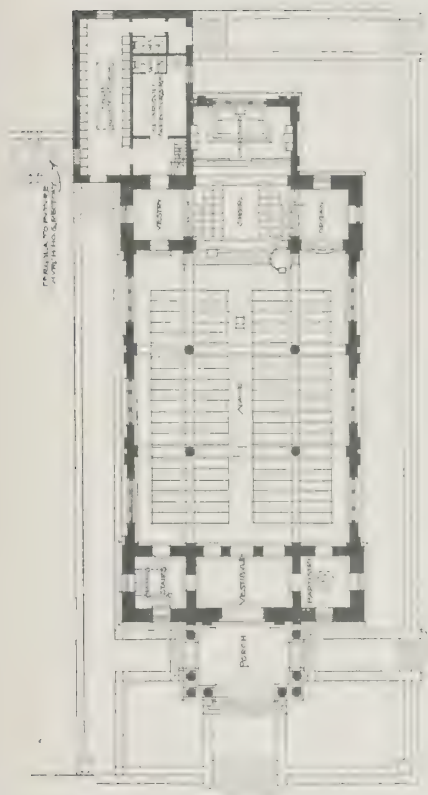
MENTION.
 SUBMITTED BY ROBERT FOCKENS, BOSTON, MASS.



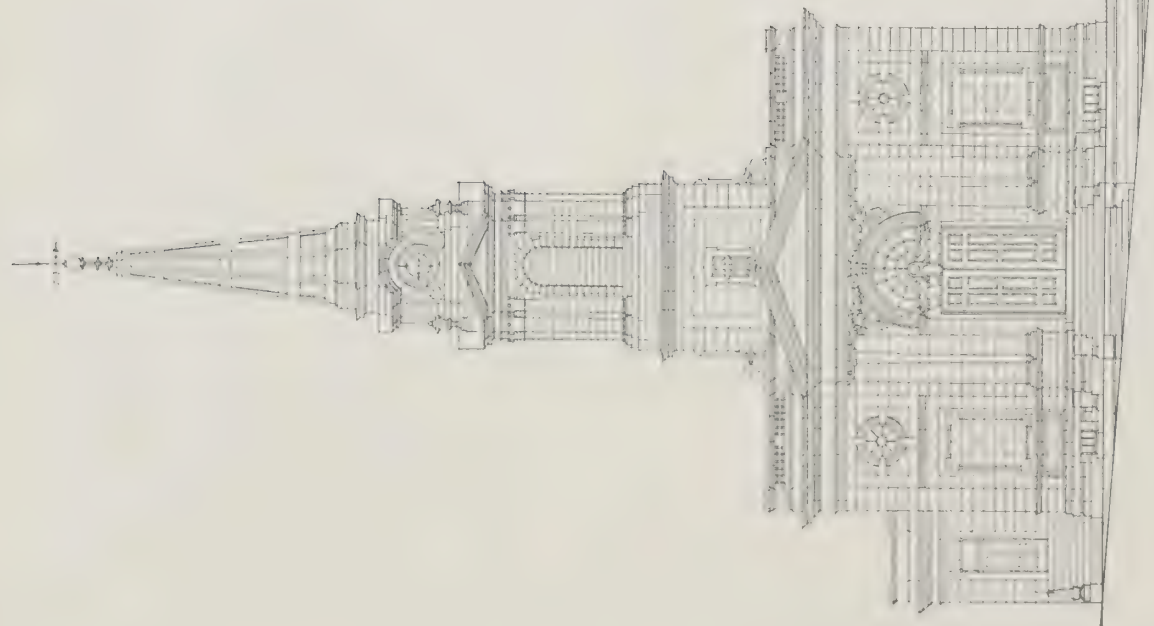
SUBMITTED BY CHARLES E. WHITE, JR., OAK PARK, ILL.



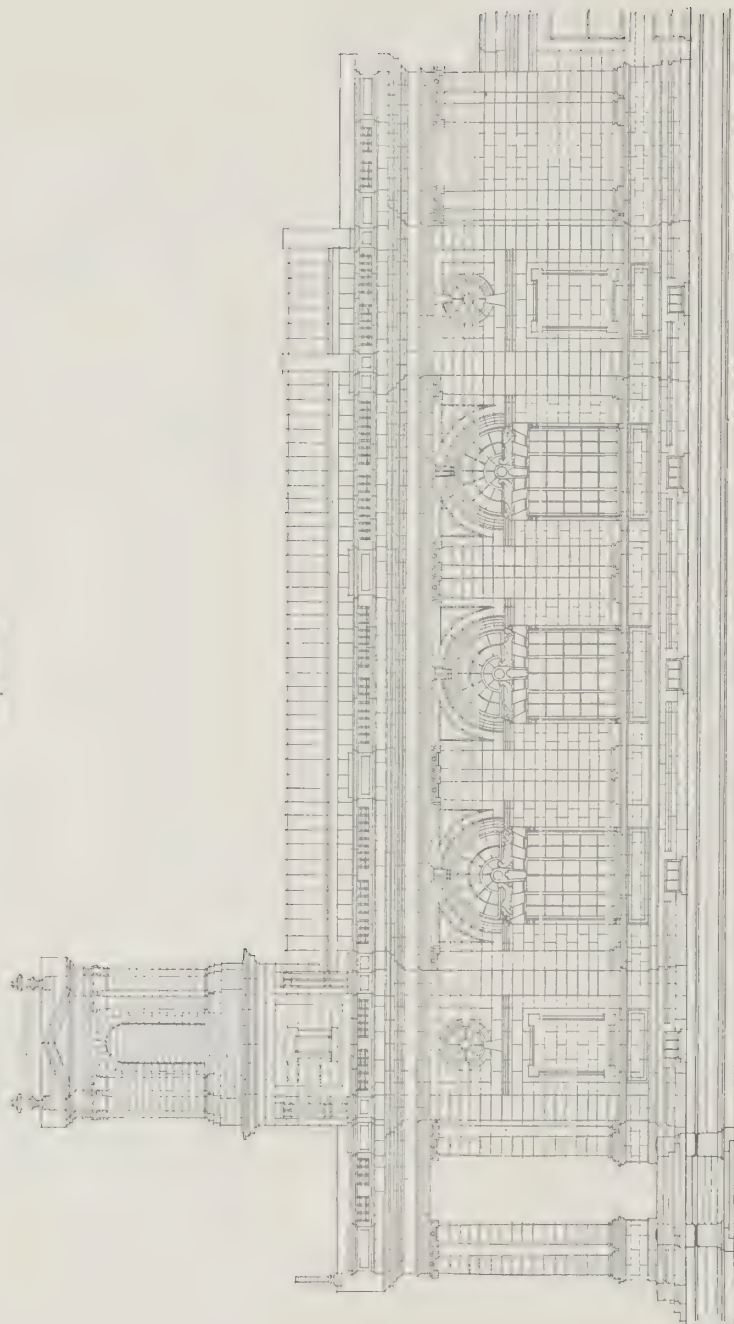
SUBMITTED BY ROBERT M. FARRINGTON, NEW YORK CITY.



— PLAN —



— FRONT ELEVATION —

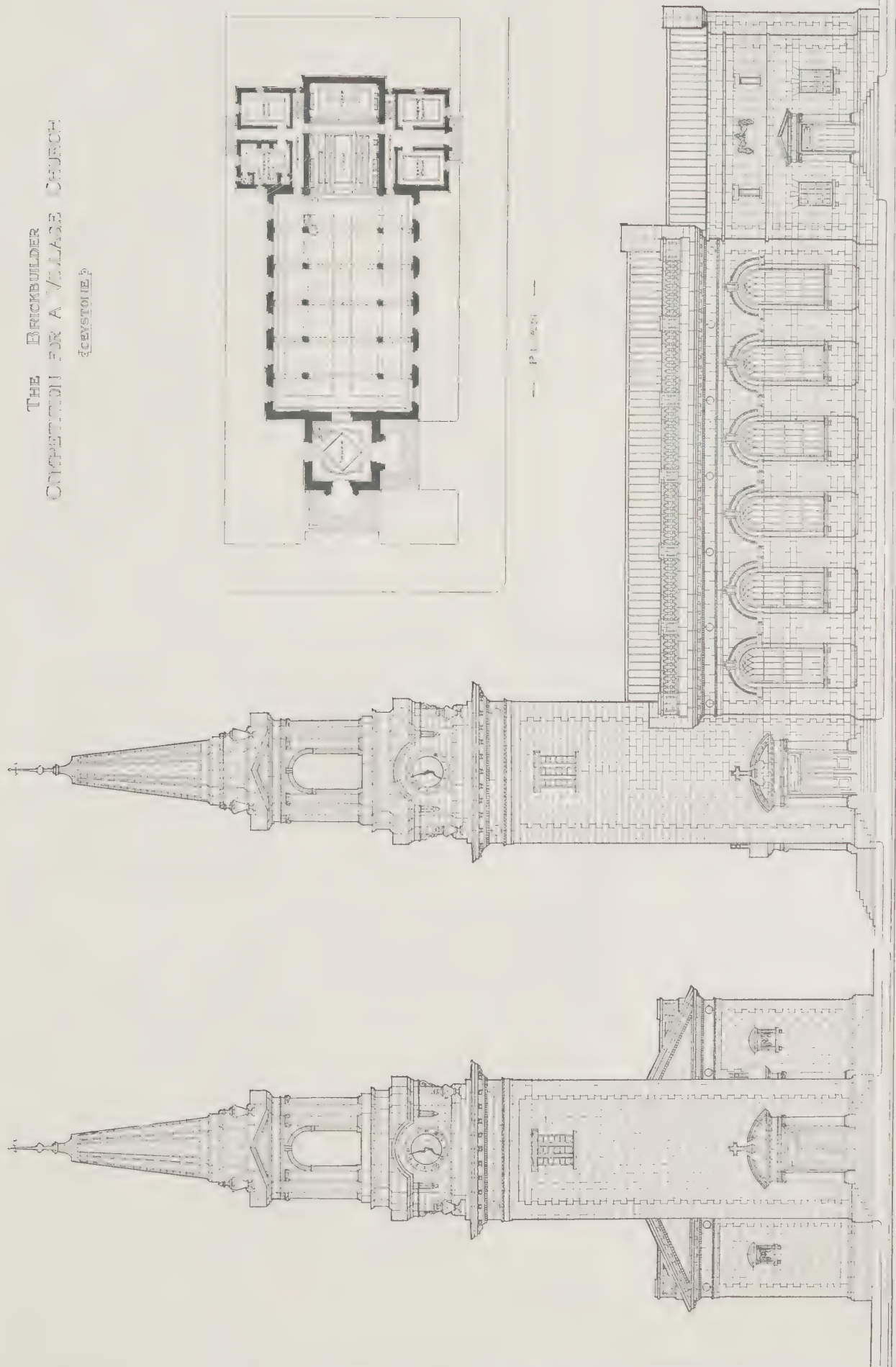


— SIDE ELEVATION —

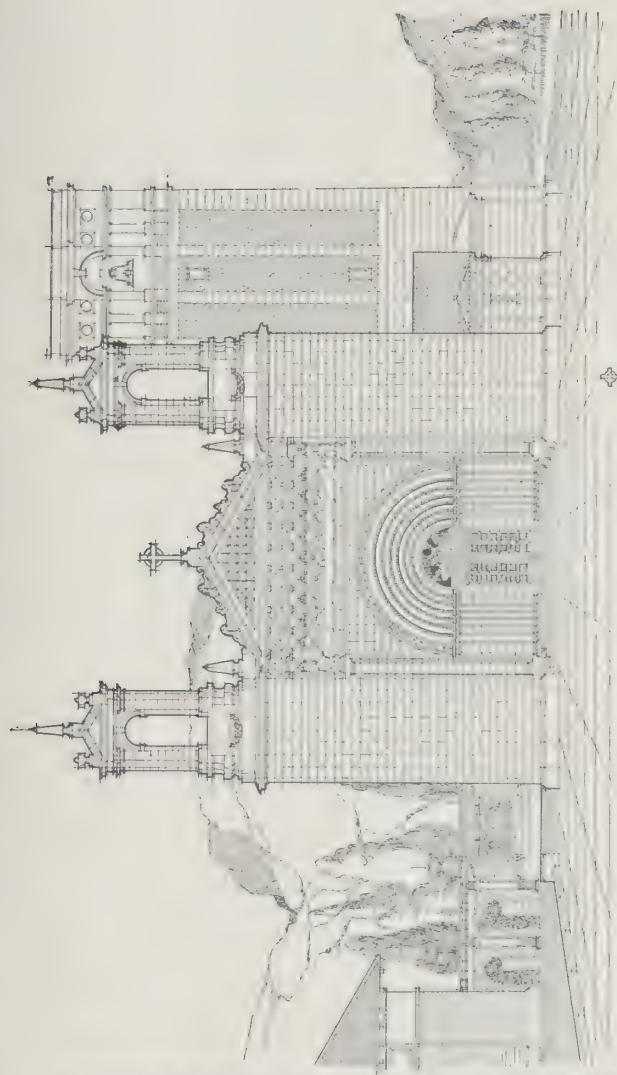
W. C. WINTERS
ARCHT.
GEORGIA.

SUBMITTED BY GEORGE C. WINTERS, NEW YORK CITY.

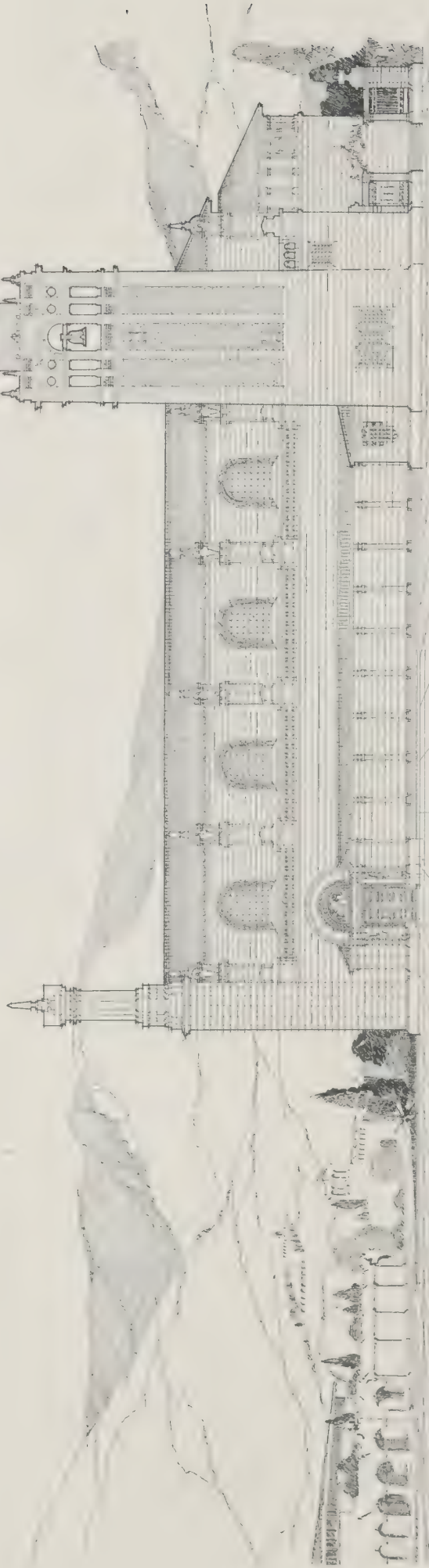
THE BRICKBUILDER
 CRISPEN FOR A WALLS CHURCH
 CLEVELAND



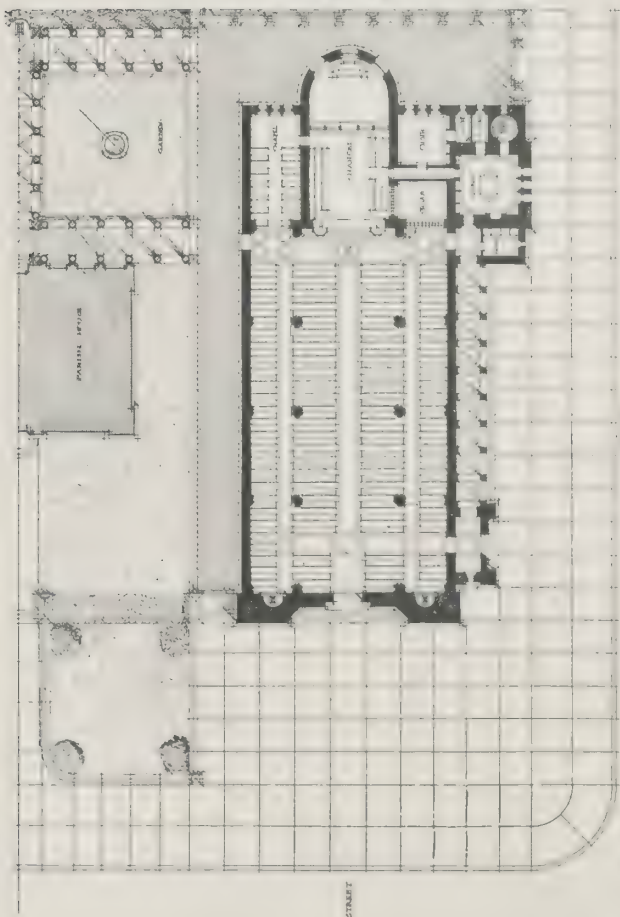
SUBMITTED BY ROBERT M. WRIGHT, CLEVELAND, OHIO.



WEST ELEVATION.



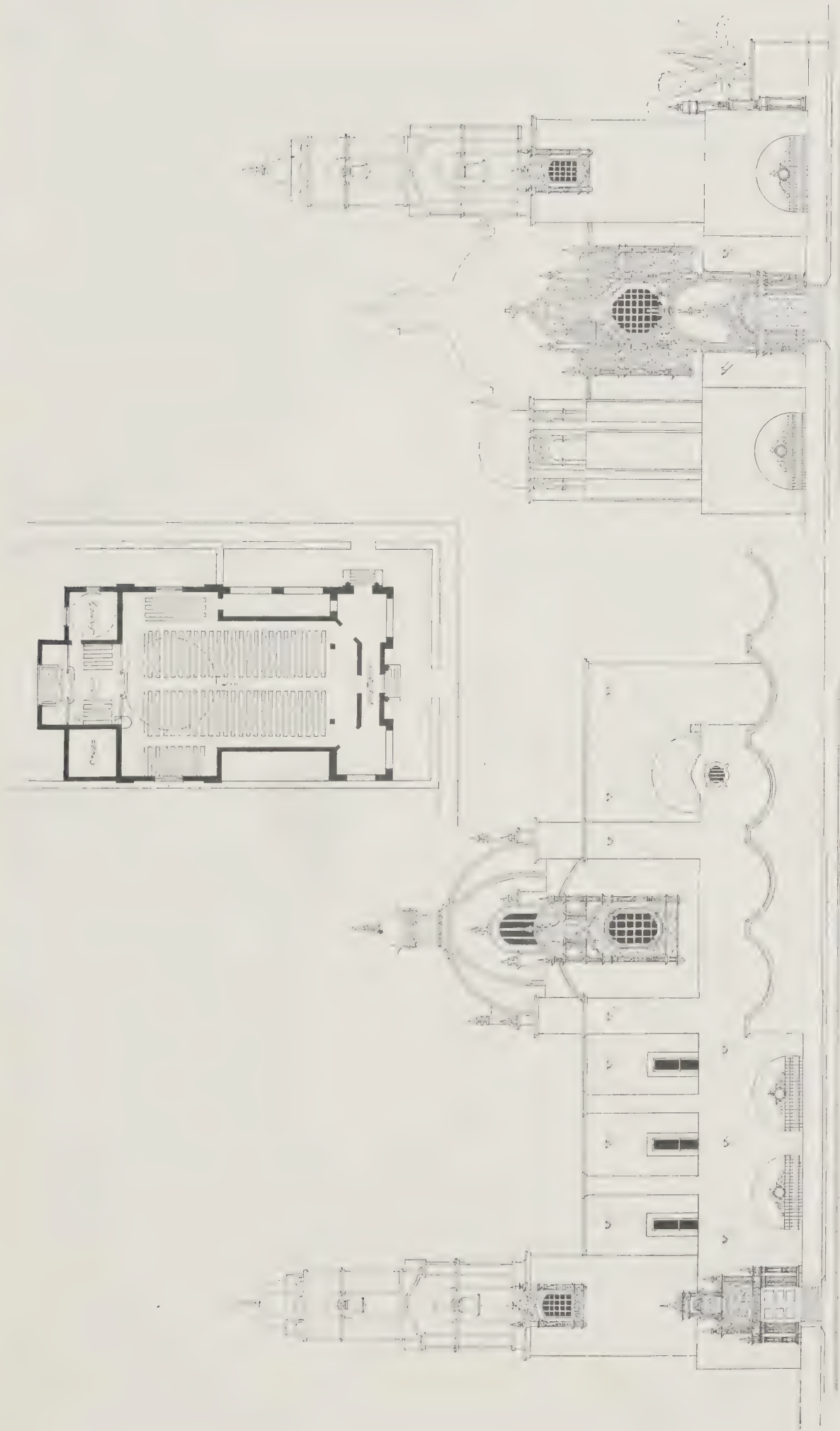
SOUTH ELEVATION.



PLAN.

TRES NIÑOS.

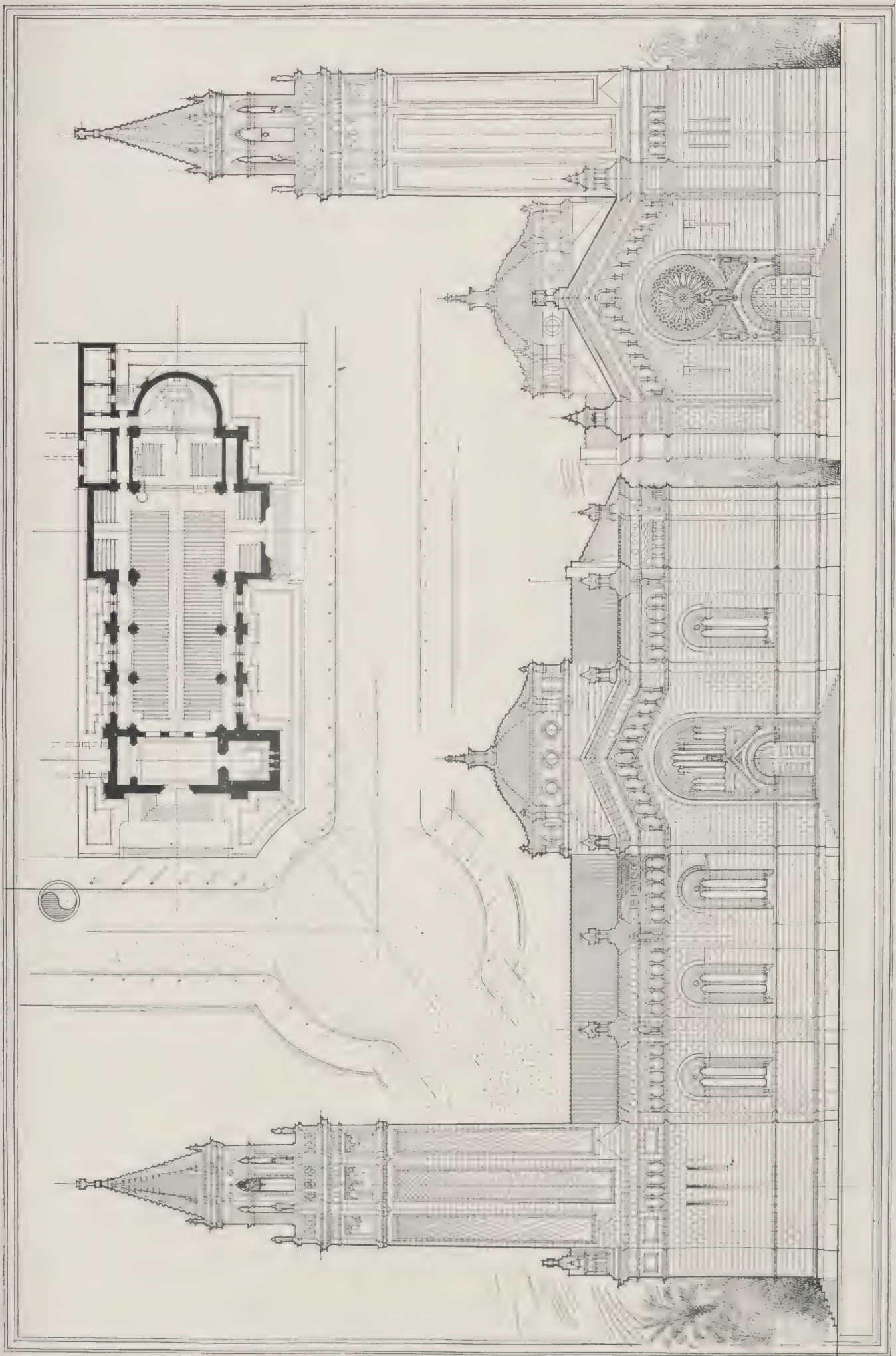
SUBMITTED BY H. E. PRINDLE, BISBEE, ARIZ. TER.



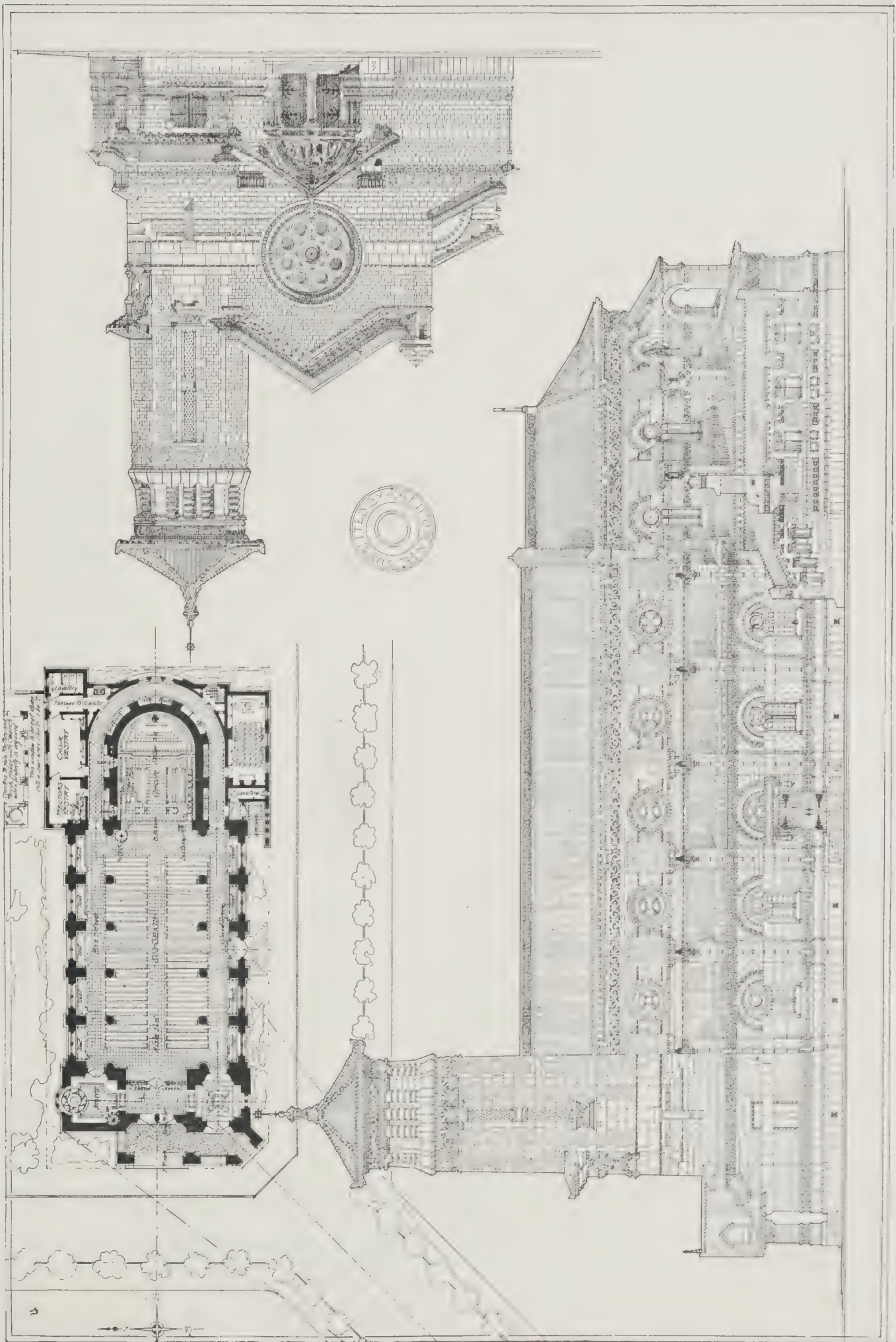
SIDE ELEVATION

FRONT ELEVATION

SUBMITTED BY GUSTAVUS A. TROST, EL PASO, TEXAS.



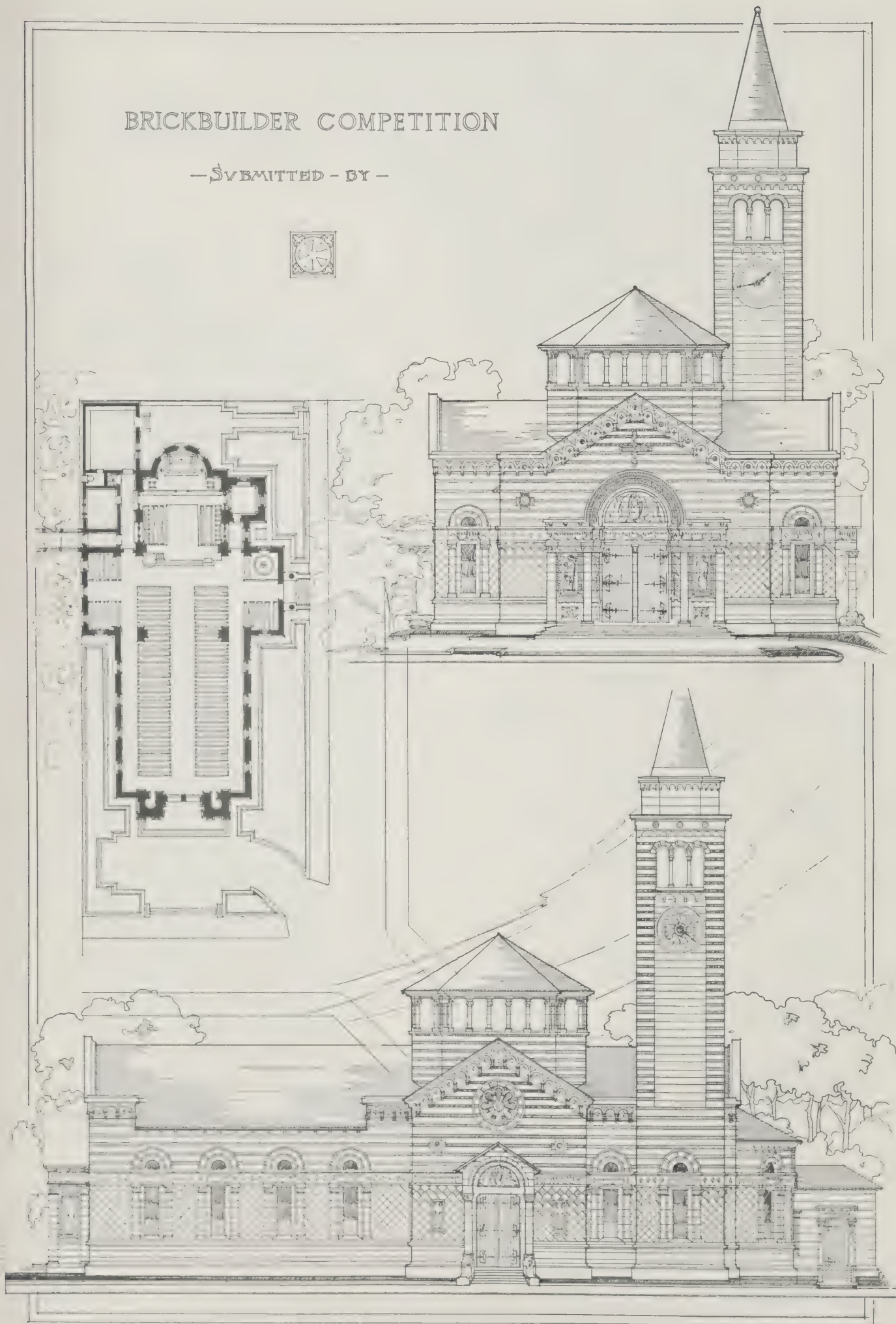
SUBMITTED BY H. S. PITTS, PROVIDENCE, R. I.



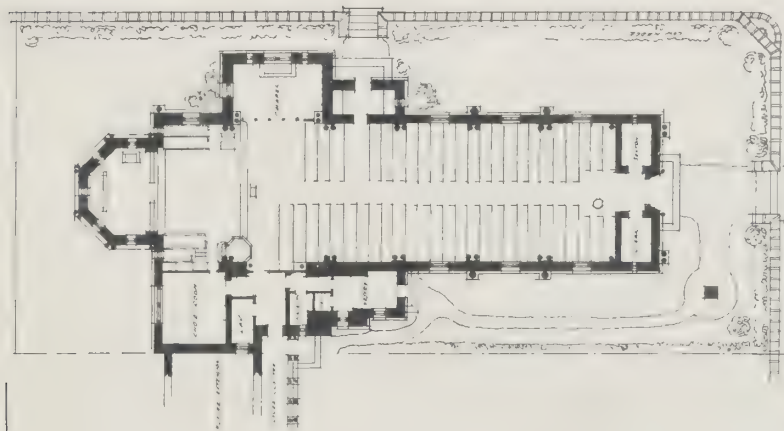
SUBMITTED BY A. DURANT SNEDEN, PARIS, FRANCE.

BRICKBUILDER COMPETITION

—SUBMITTED—BY—



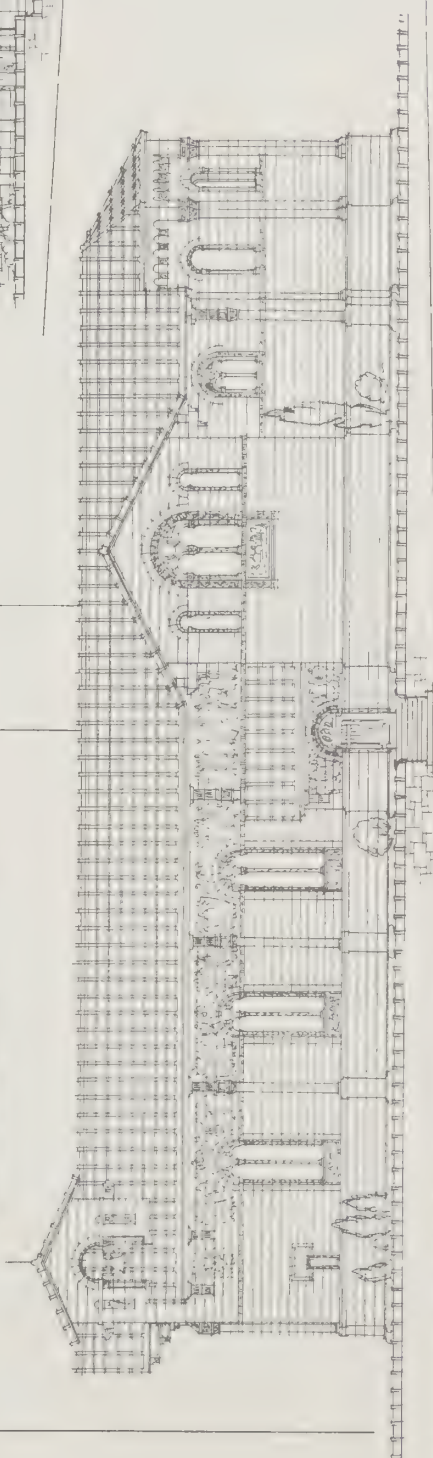
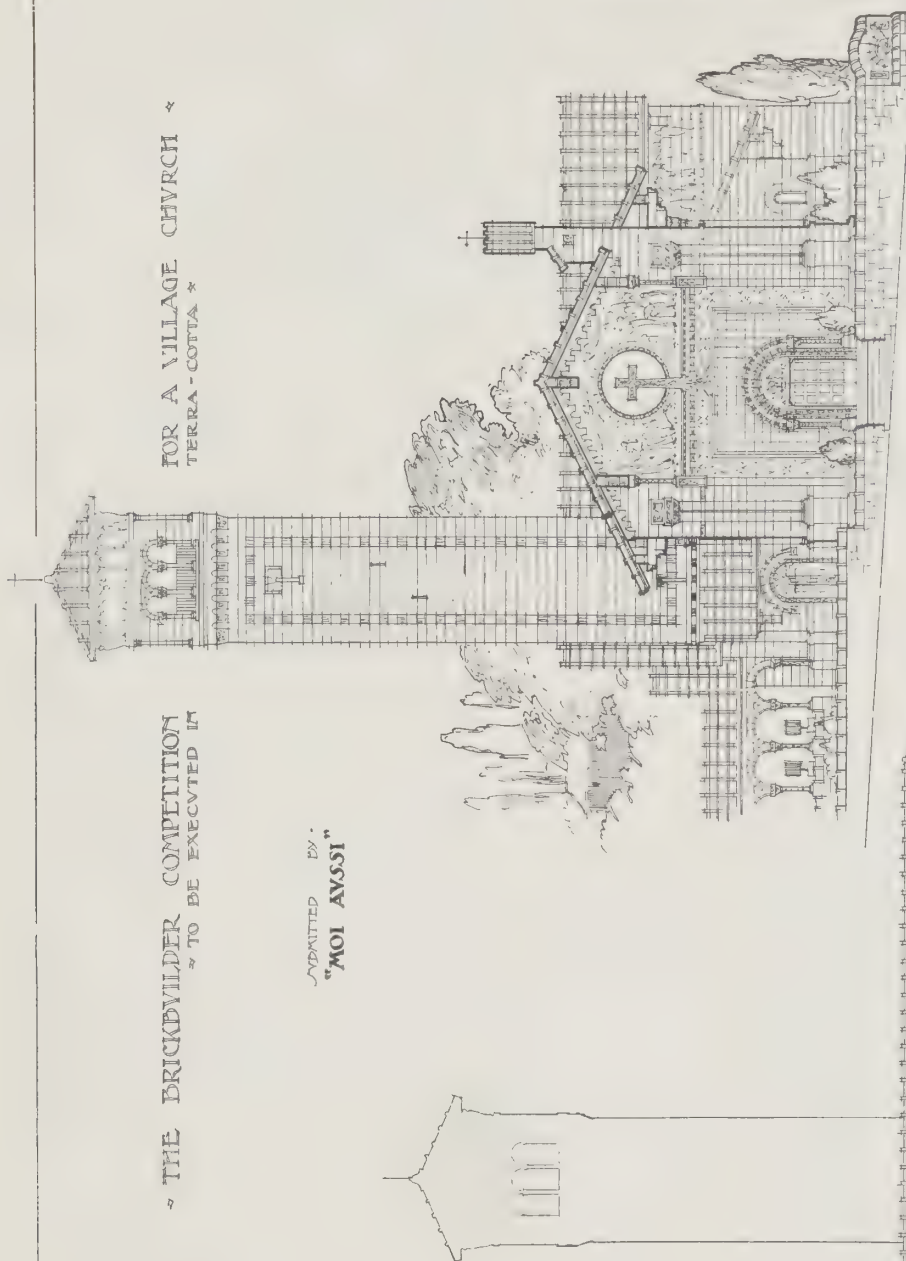
SUBMITTED BY FRANCIS A. NELSON, NEW YORK CITY, AND IRVING C. MOLLER, BOSTON.



THE BRICKVILDER COMPETITION
TO BE EXECUTED IN

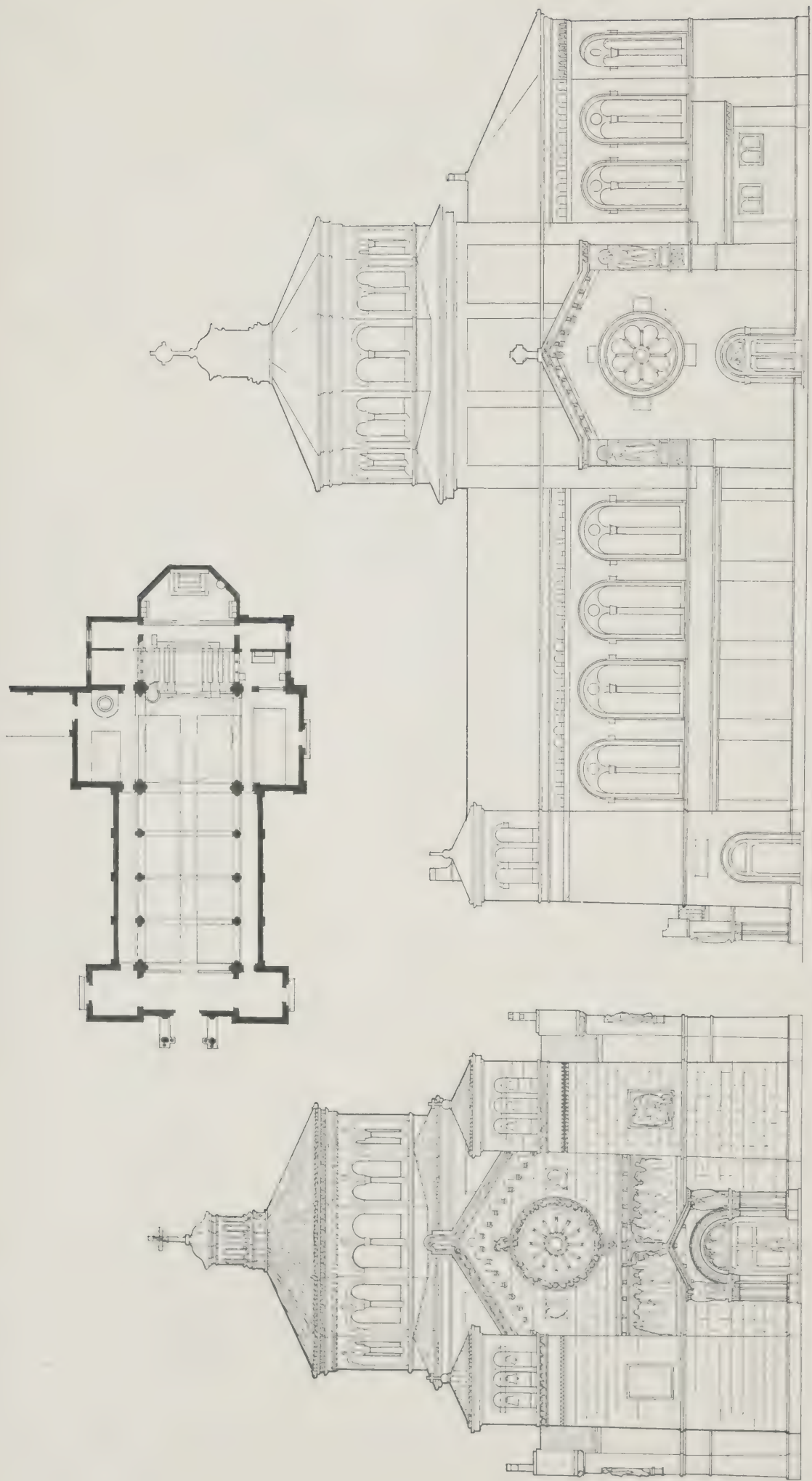
ADMITTED BY -
"MOI AVSSI"

FOR A VILLAGE CHURCH
TERRA-COTTA *

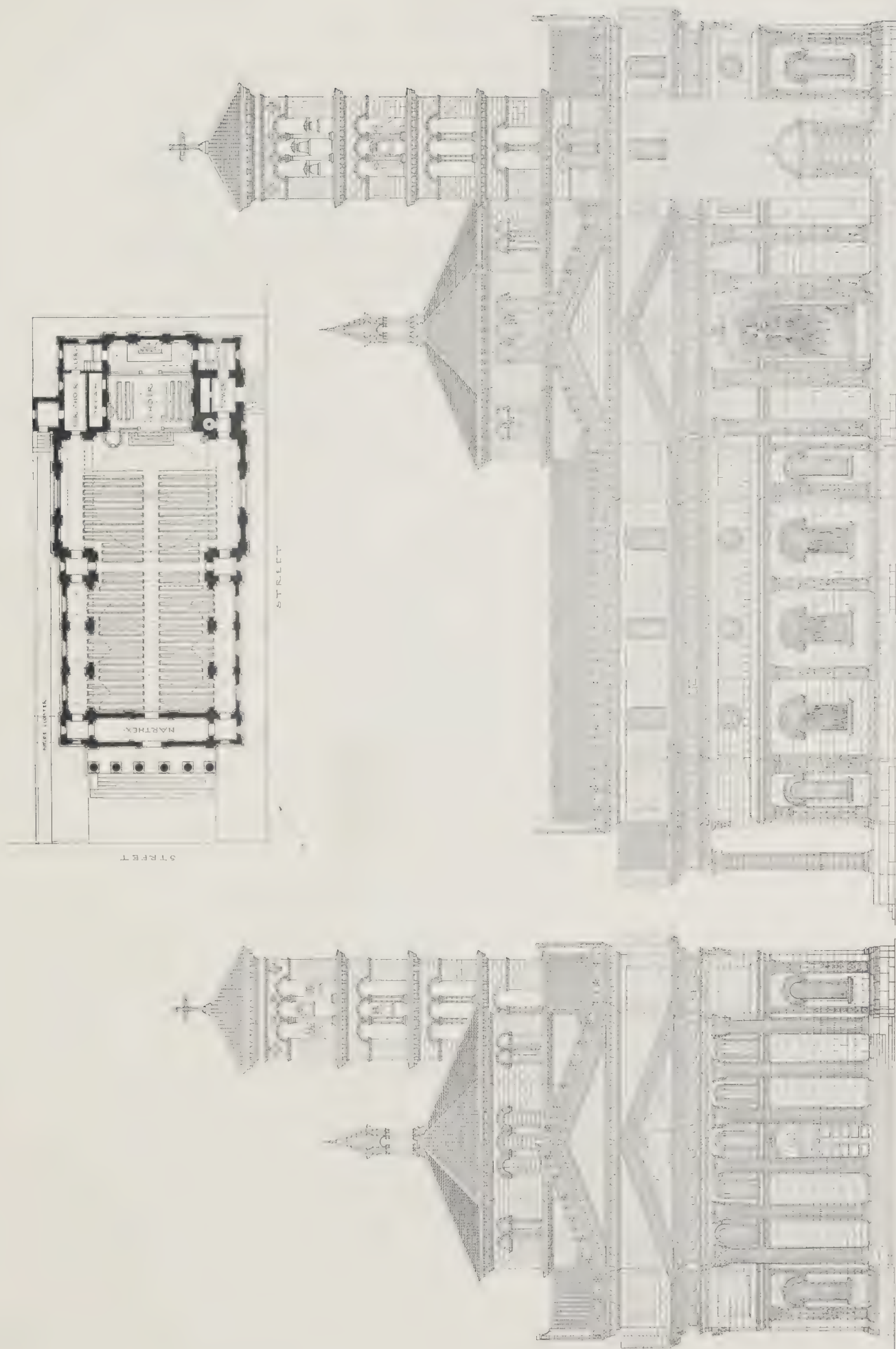


BODY OF BUILDING IN EVER, LOW
BELIEF FIGURES IN GREEN, ON SLIGHTLY
ROOF, RICH WARM BROWN, IN THE AN-
RIBS, TOLLATED AND GEOMETRICAL ORNAM-
ENT SPICGLACED, EVER SLIGHTLY GREEN &
VIRVEN IN COLOR.

SUBMITTED BY J. MELVILLE MILLER, MONTREAL, CANADA.



SUBMITTED BY DAVID D. BARNES, BOSTON, MASS.



SUBMITTED BY WILL S. ALDRICH, NEW YORK CITY.

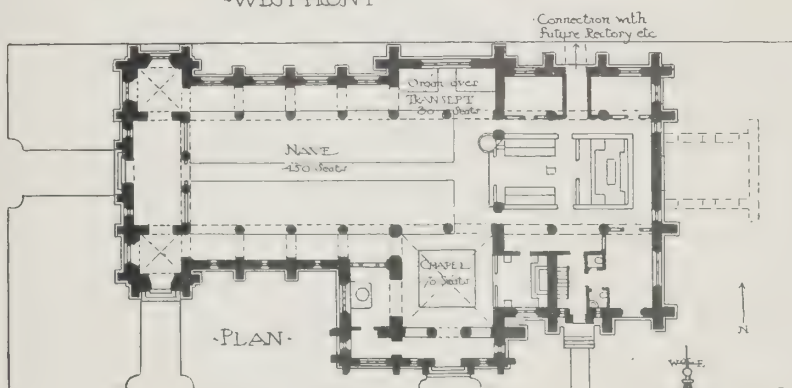




WEST FRONT.

Église St Botolph

A Village Church.
in Terra Cotta for "The Brickbuilder".
Trimming: a warm Grey-Mauve Wall.
Surface in blocks of Yellow Browns and
Umbers. Occasional pieces treated
in Semi-Glaze and mottled or more
variegated in tone. All ornamental
work is relieved by deepening the color
of recessed surfaces to a dark blue or
dull Green. The upper portions of
Walls and Towers to be given a stron-
ger color treatment than the lower parts.

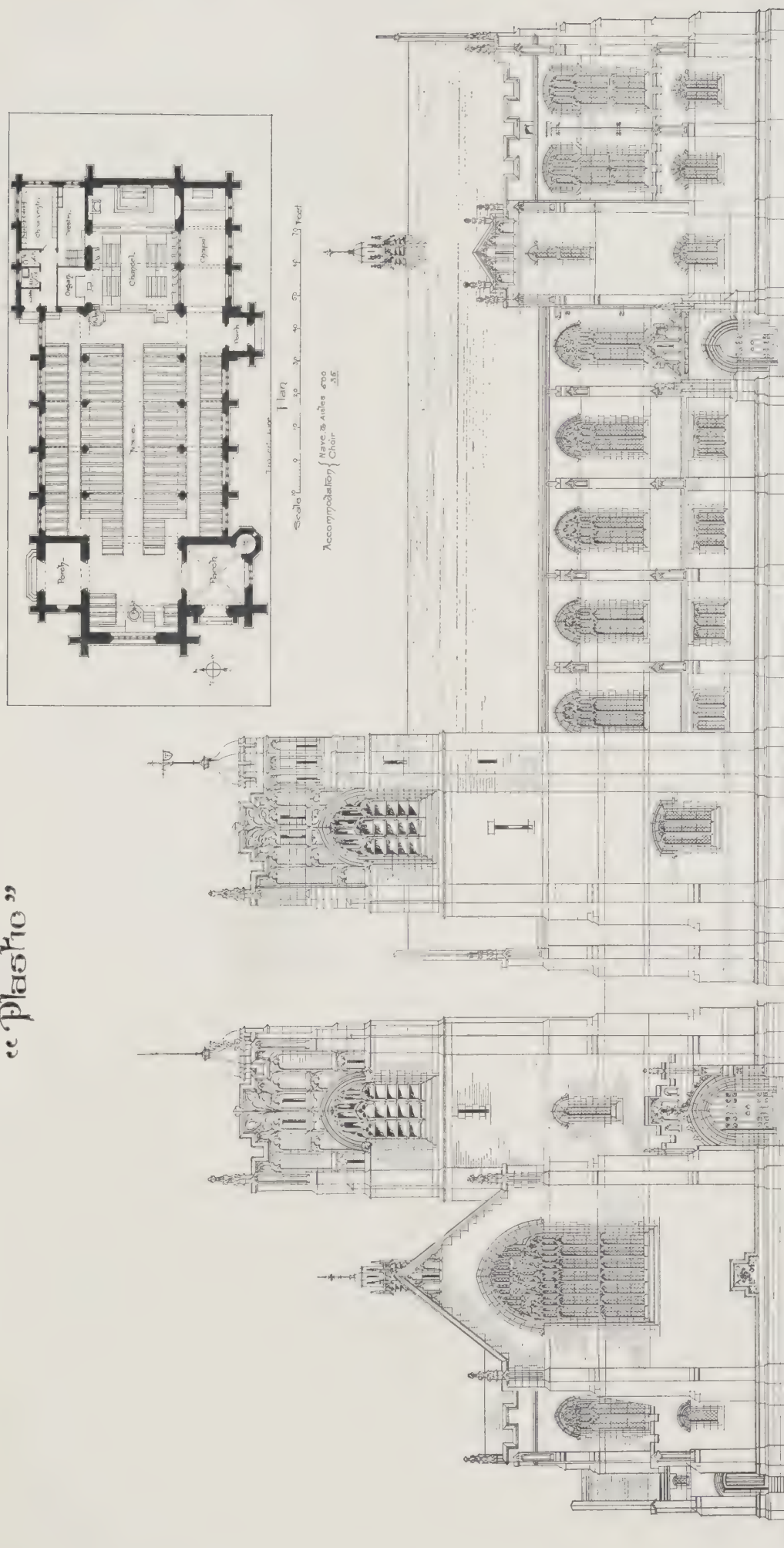


SOUTH FRONT.

SUBMITTED BY FRANK C. BROWN, BOSTON, MASS.

Competition for a Village Church

"Plastic"

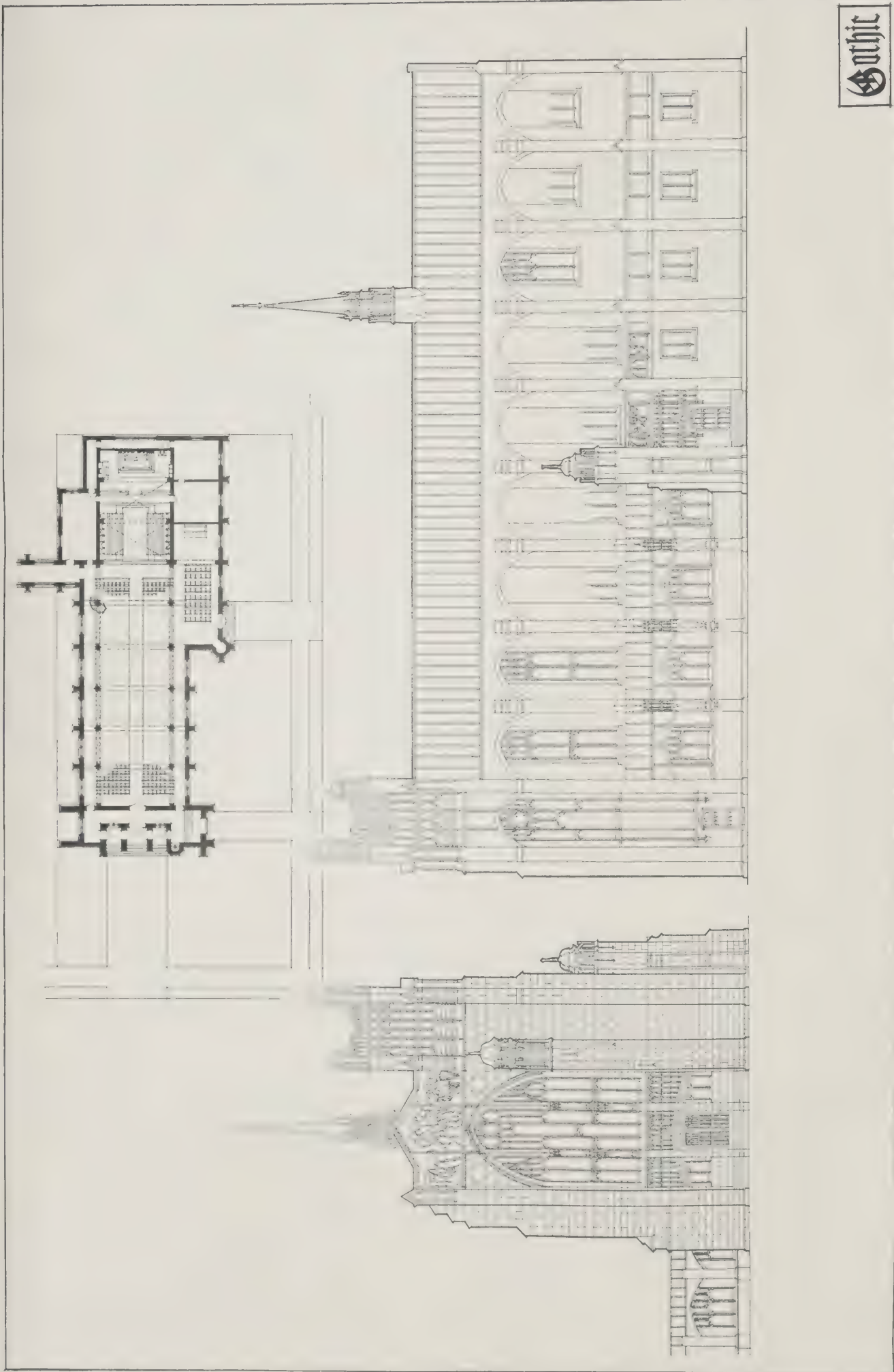


West Elevation

North Elevation

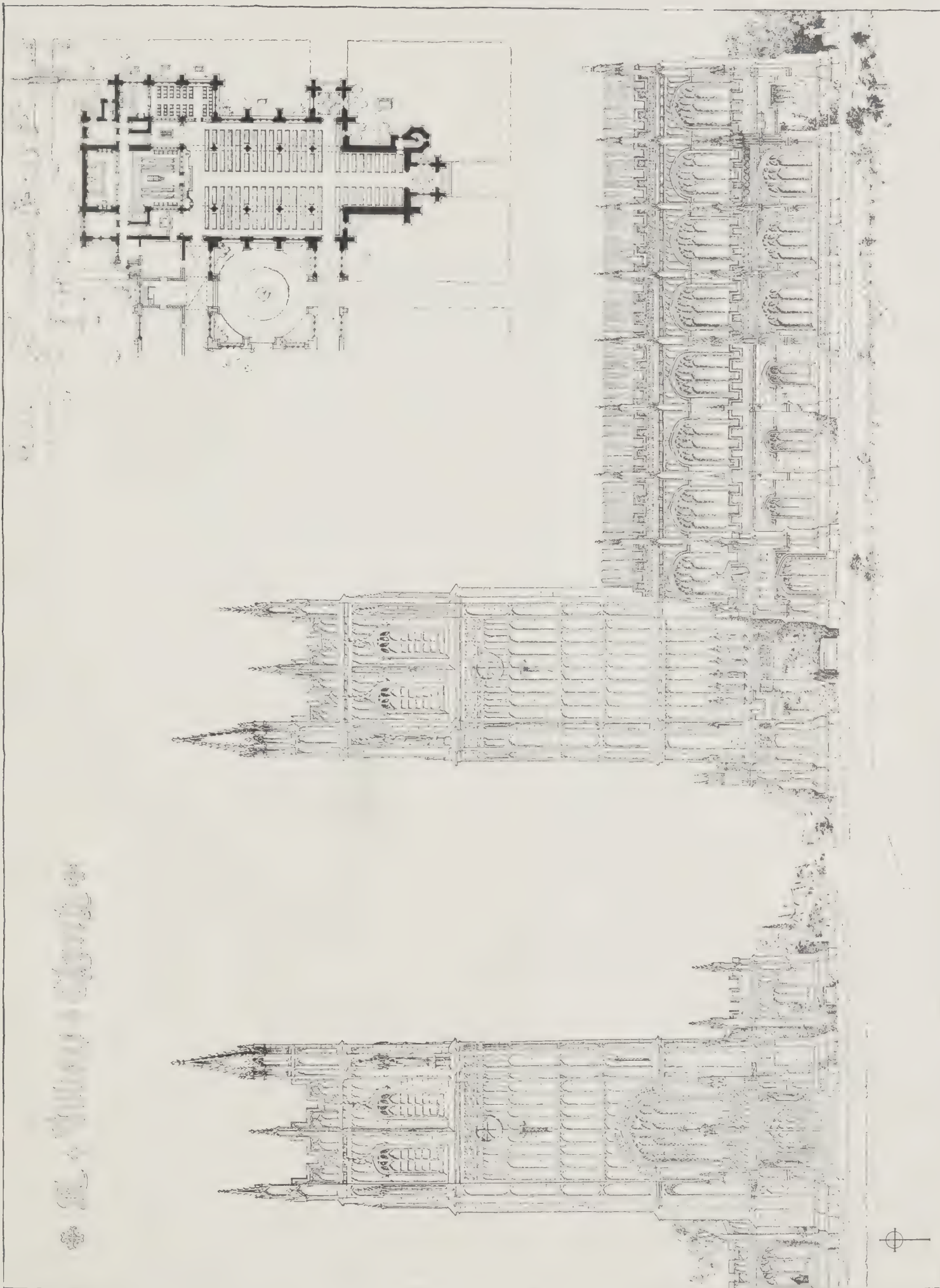
Scale 0 10 20 40 Feet

SUBMITTED BY J. HENRY EAMES, NEW YORK CITY.



Gothic

SUBMITTED BY HECTOR A. PAYNE, DETROIT, MICH.



SUBMITTED BY HUTCHINS & FAELTEN, BOSTON, MASS.

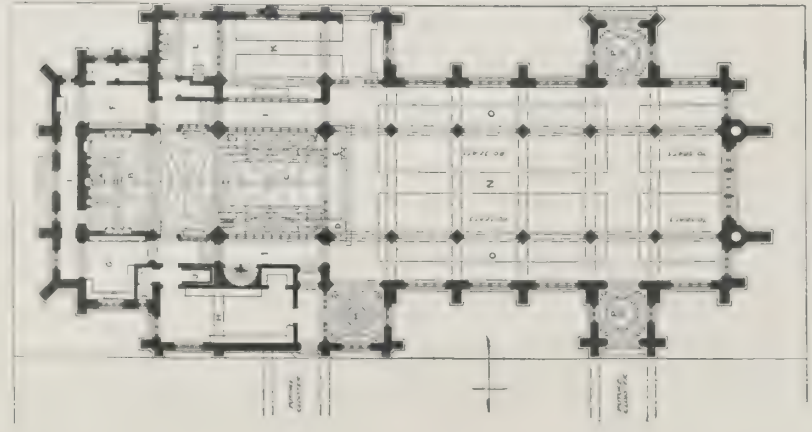
SUBMITTED BY



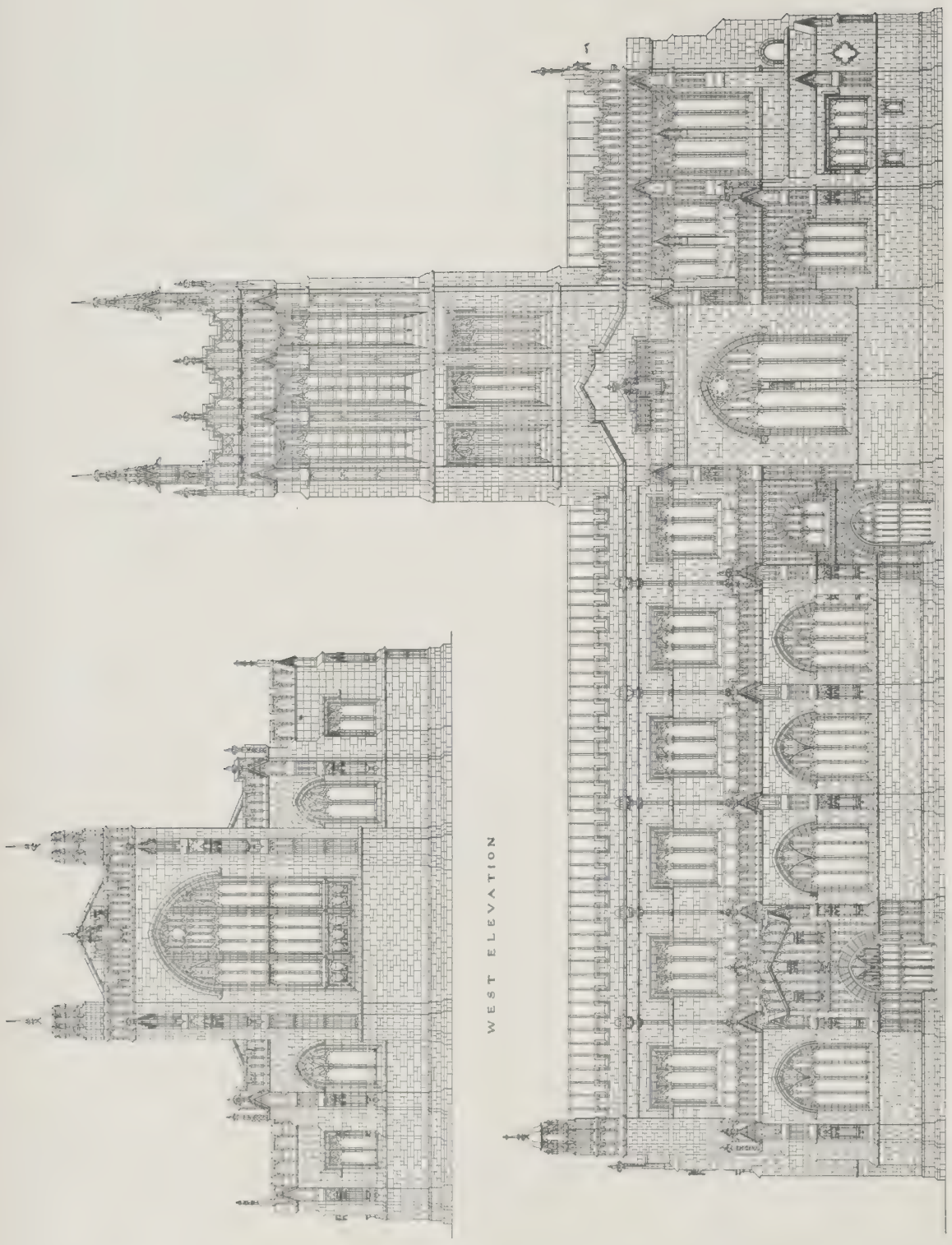
INDEX	
A	HIGH ALTAR
B	SANCTUARY
C	CHOIR
D	PULPIT
E	LECTERN
F	PRESTIDAGRY
G	WORKING
H	CHOIR ROOM
I	AMBULATORY
J	TREASURE VAULT
K	CHAPEL
L	CHAPEL SANCTUARY
M	BAPTISTRY
N	NAVE
O	NAVE
P	PORCH
Q	THE ORGAN TOWER
R	IN THE NORTH TOWER
S	THE ALTAR
T	THE ALTAR

SCALE OF PLAN

SCALE OF ELEVATIONS



PLAN

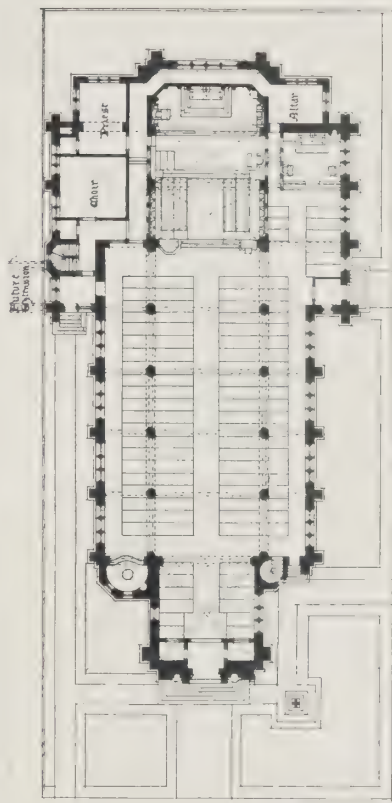


WEST ELEVATION

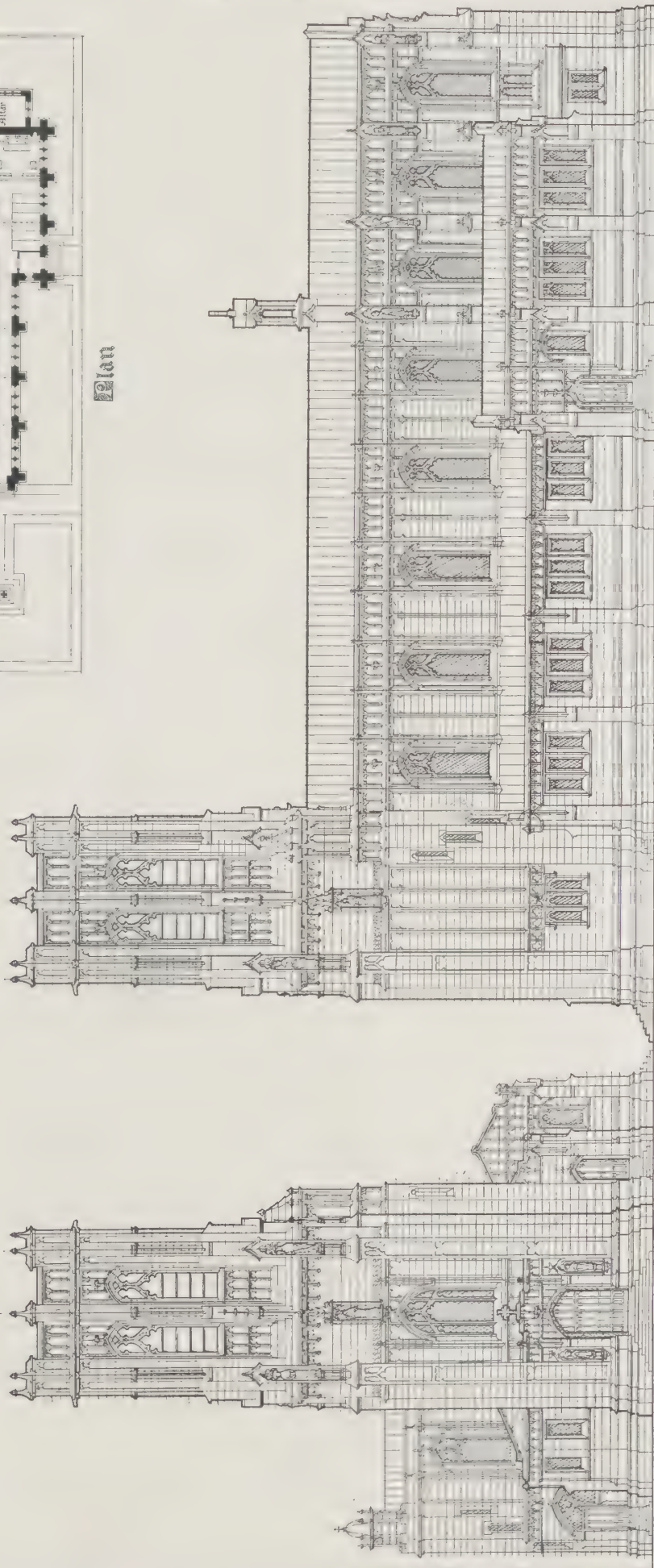
SOUTH ELEVATION

SUBMITTED BY EDWIN R. CLARK, LOWELL, MASS.

Competition for a Village Church



Plan



West Front

South Side



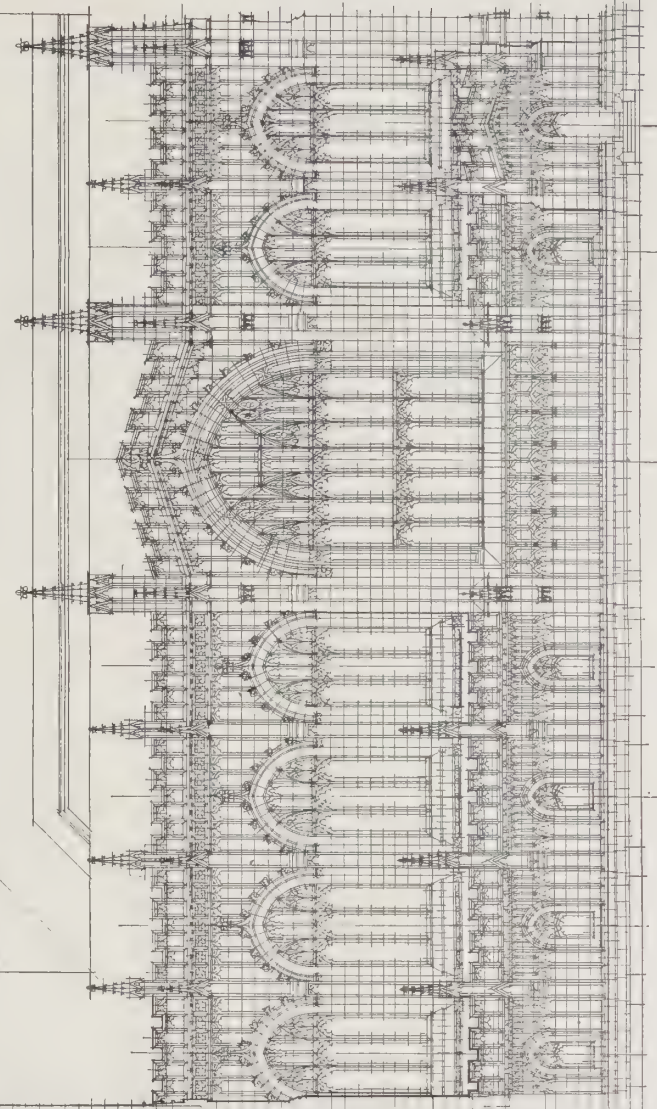
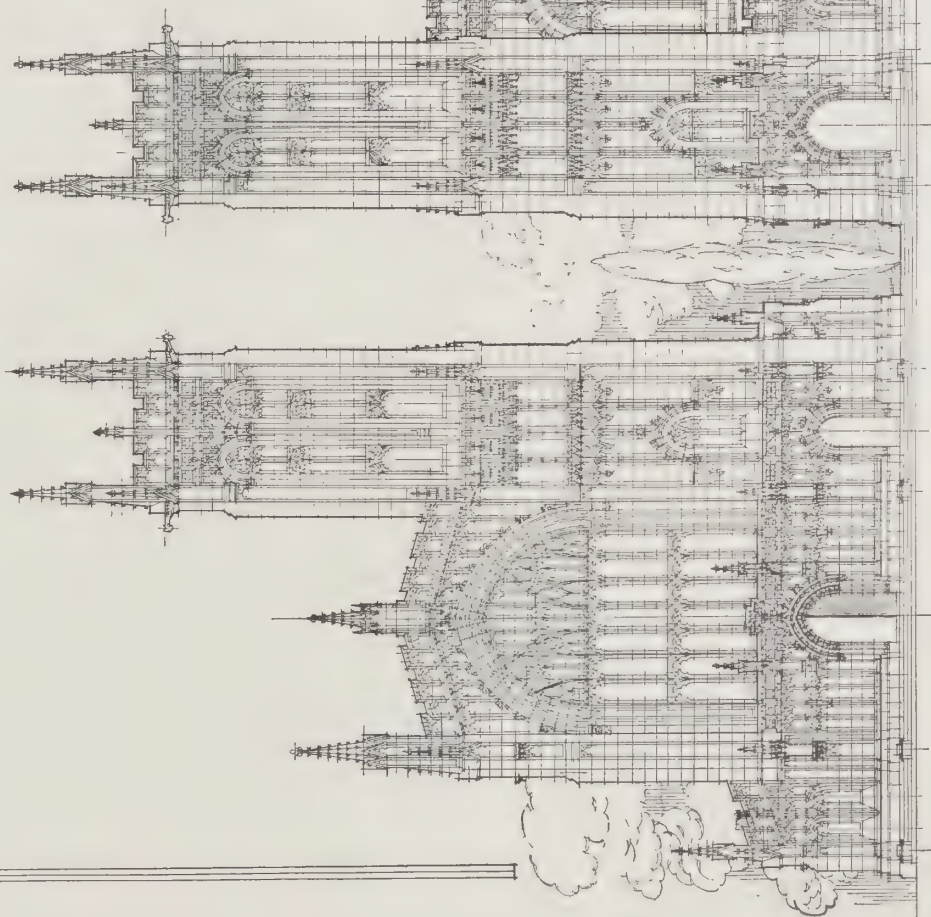
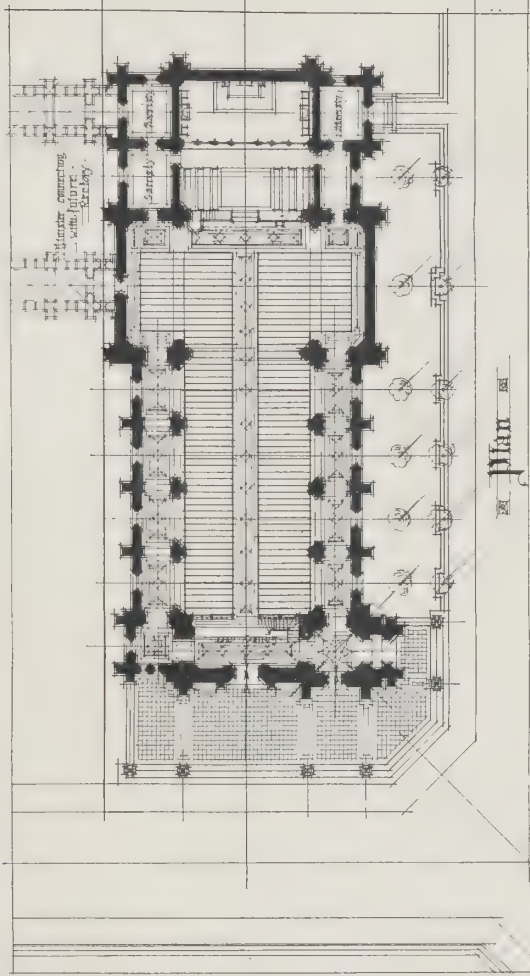
SUBMITTED BY ROBERT TURNER WALKER, BOSTON, MASS.

The drawing shows the South Elevation of the Church of the Holy Spirit. It is a tall, multi-story building with a central tower and side wings. The central tower has a series of arched windows and a small spire at the top. The side wings also have arched windows and are topped with flat roofs. The building is surrounded by a low wall and a path. The drawing is a black and white line drawing.

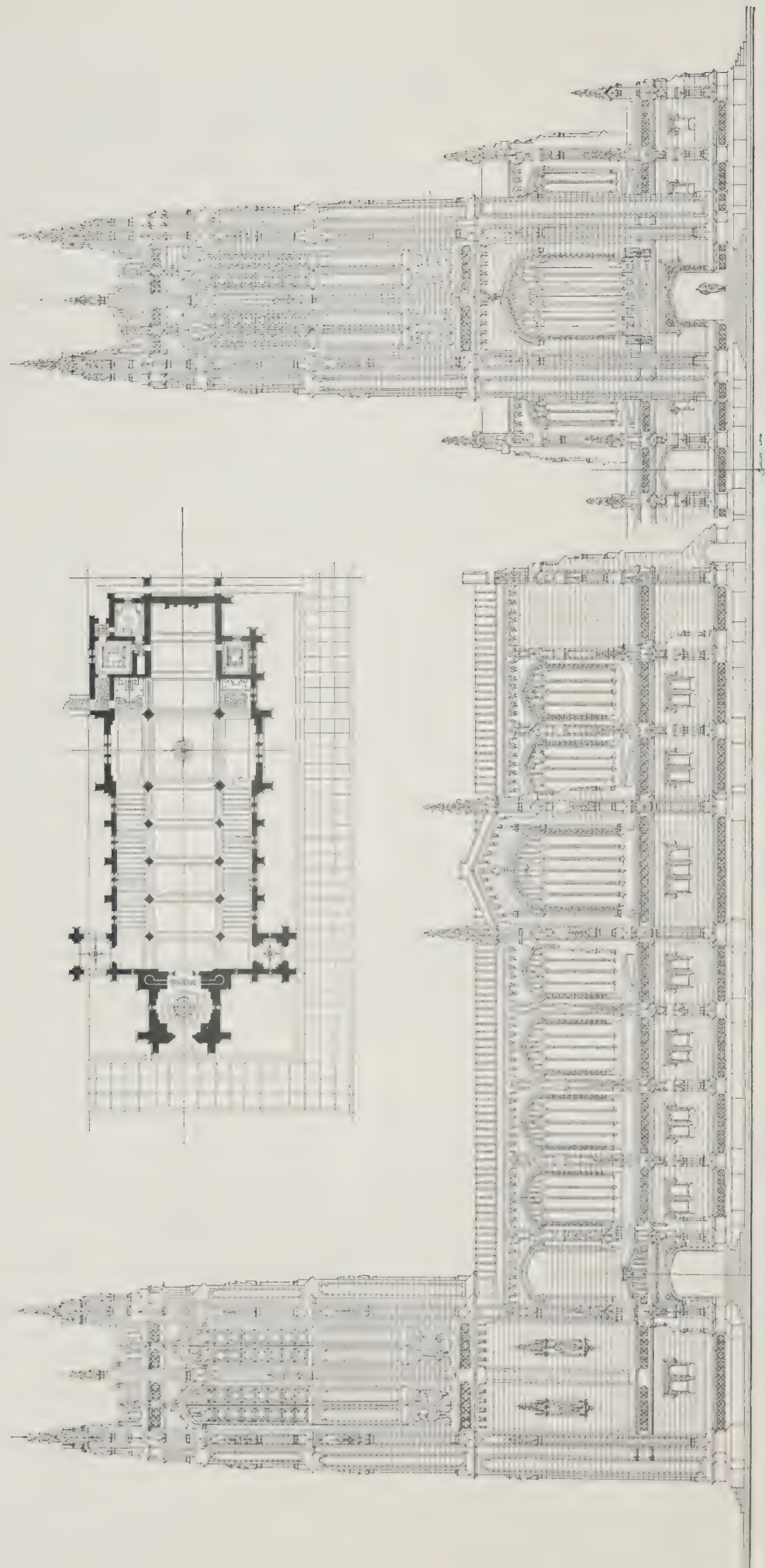
SOUTH ELEVATION

SUBMITTED BY JOHN SUTCLIFFE, CHICAGO, ILL.

Design for an Episcopal Church

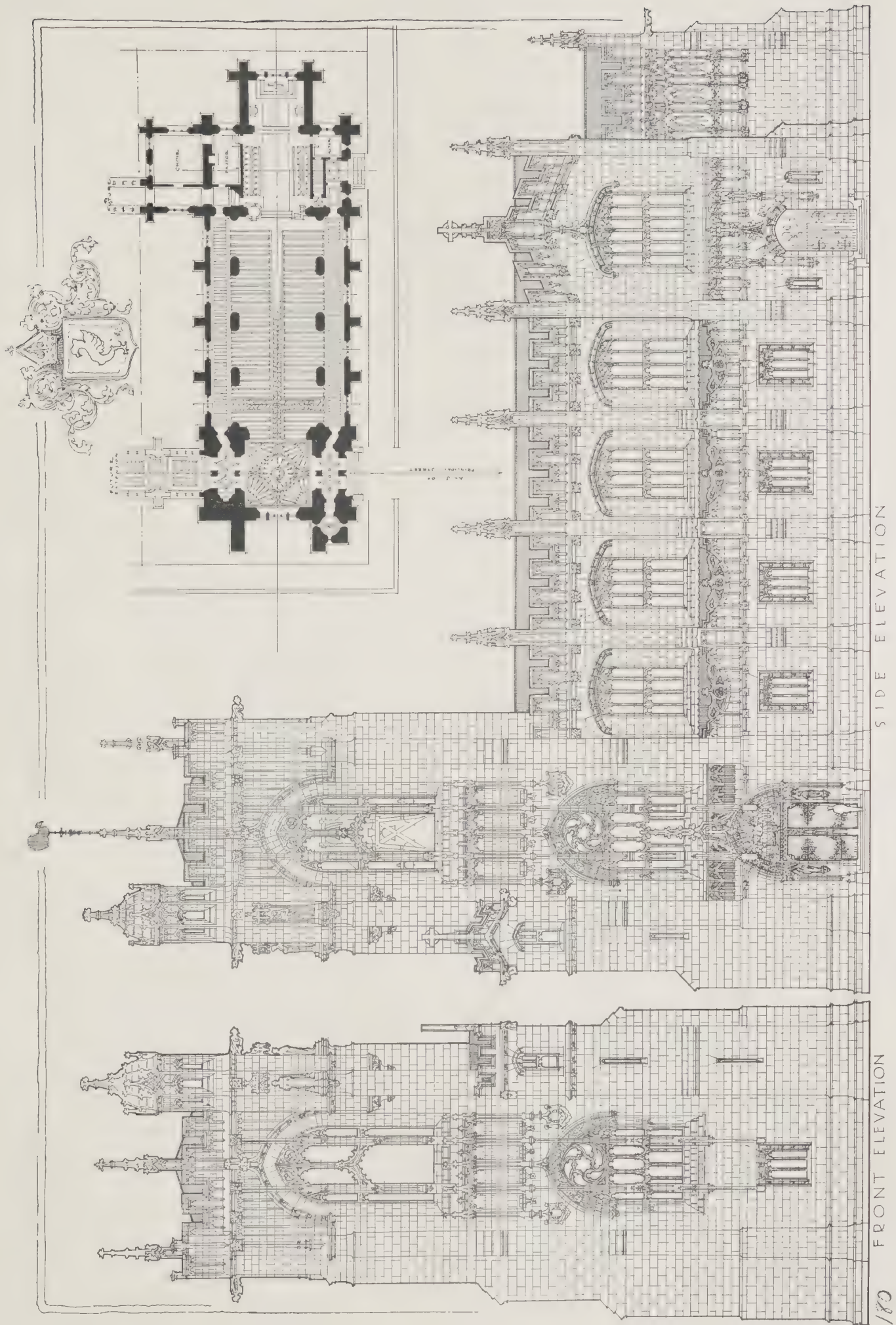


SUBMITTED BY WILLIAM L. JOHNSON, BOSTON, MASS.

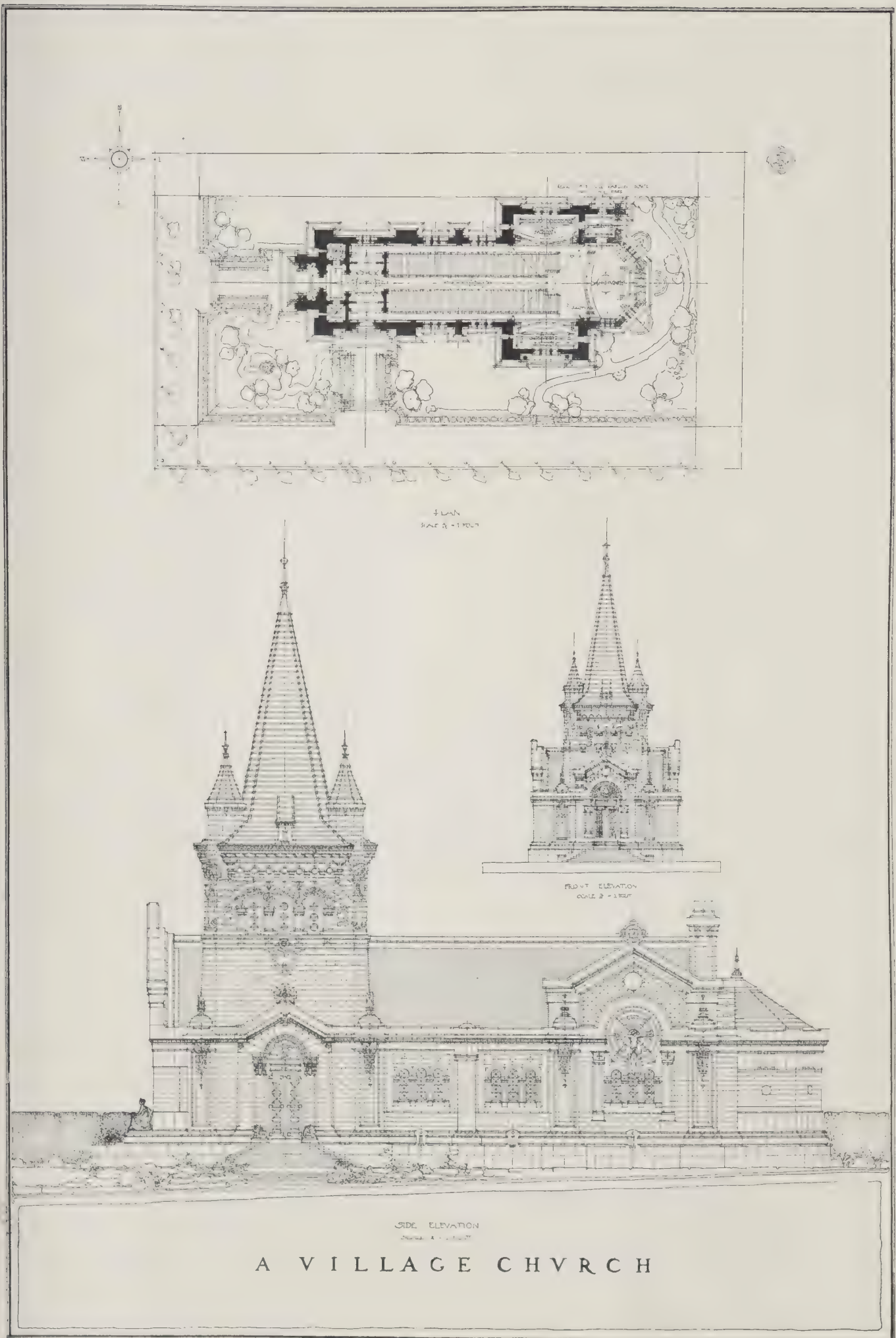


Episcopal Church of the Holy Trinity • Large Village

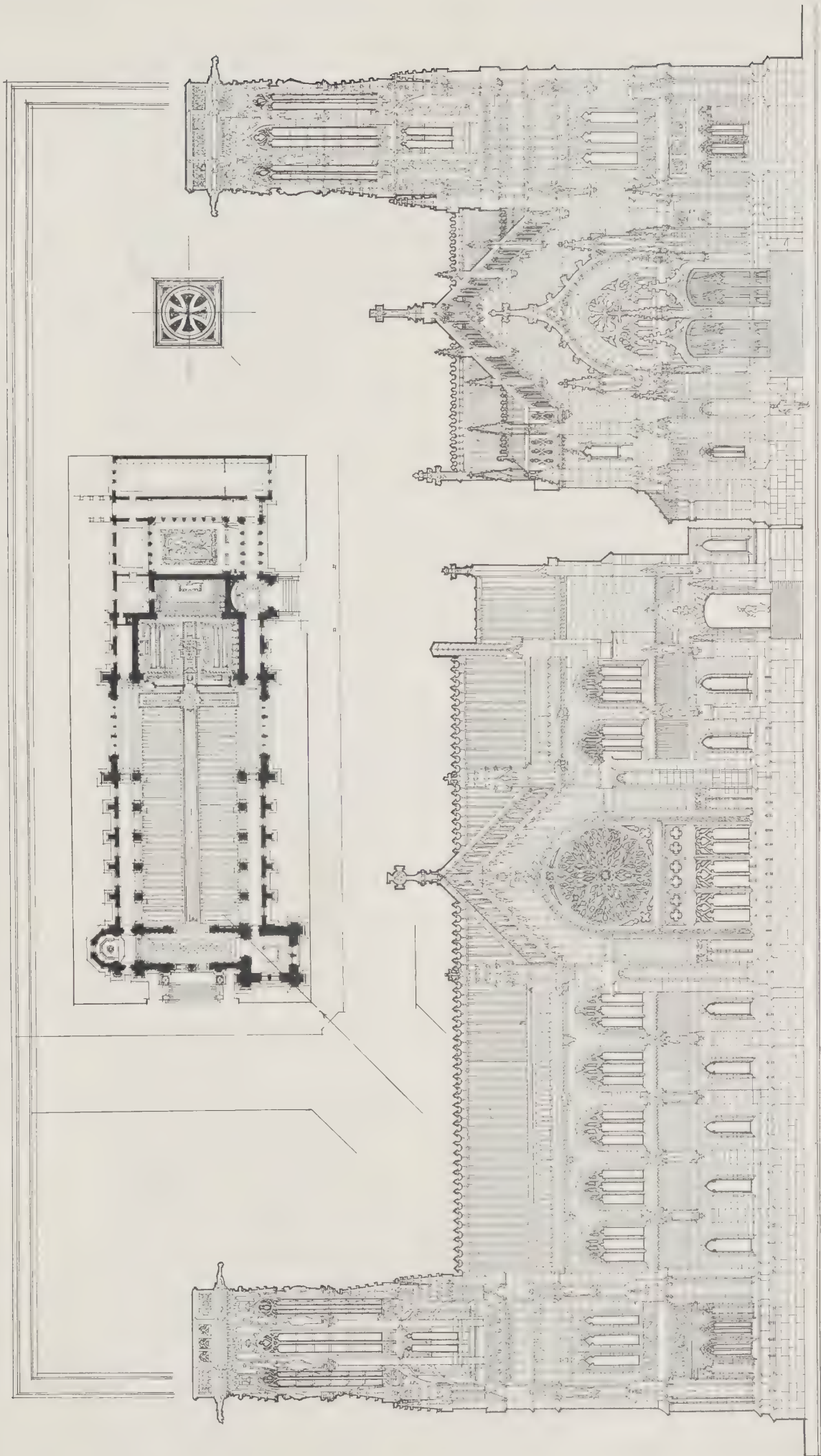
SUBMITTED BY WILLIAM D. CROWELL, BOSTON, MASS.



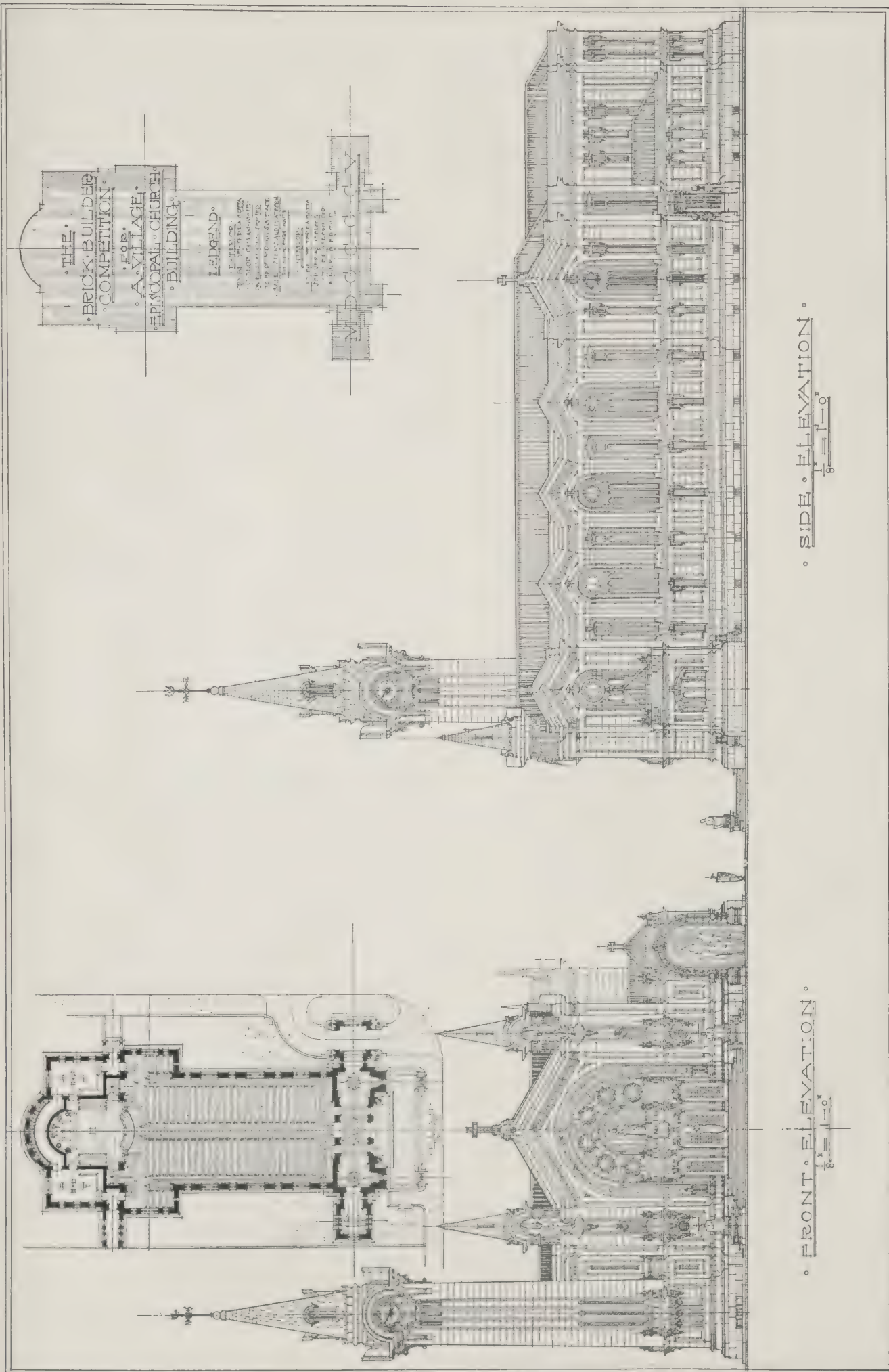
SUBMITTED BY HUBERT GEORGE RIPLEY, NEWTONVILLE, MASS.



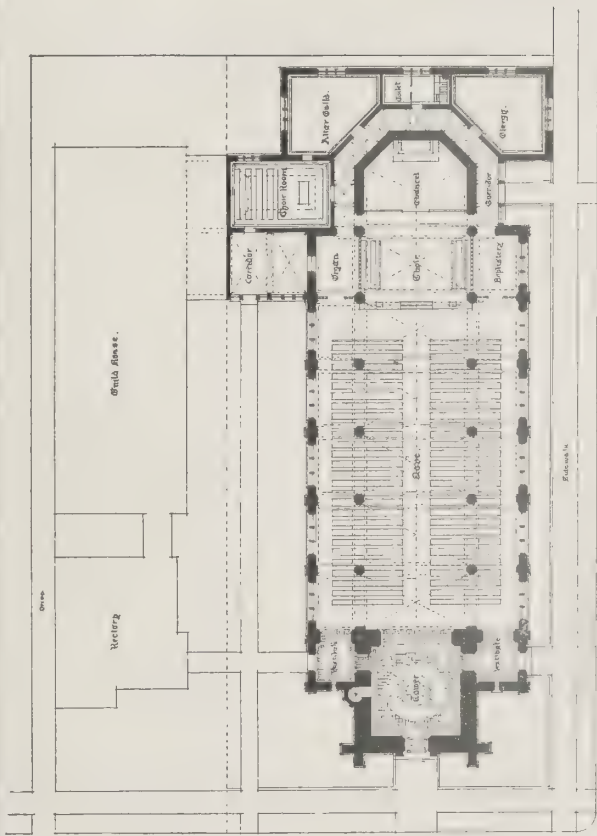
SUBMITTED BY ISRAEL P. LORD, SOMERVILLE, MASS.



SUBMITTED BY KENNETH MACDONALD, JR., PARIS, FRANCE.

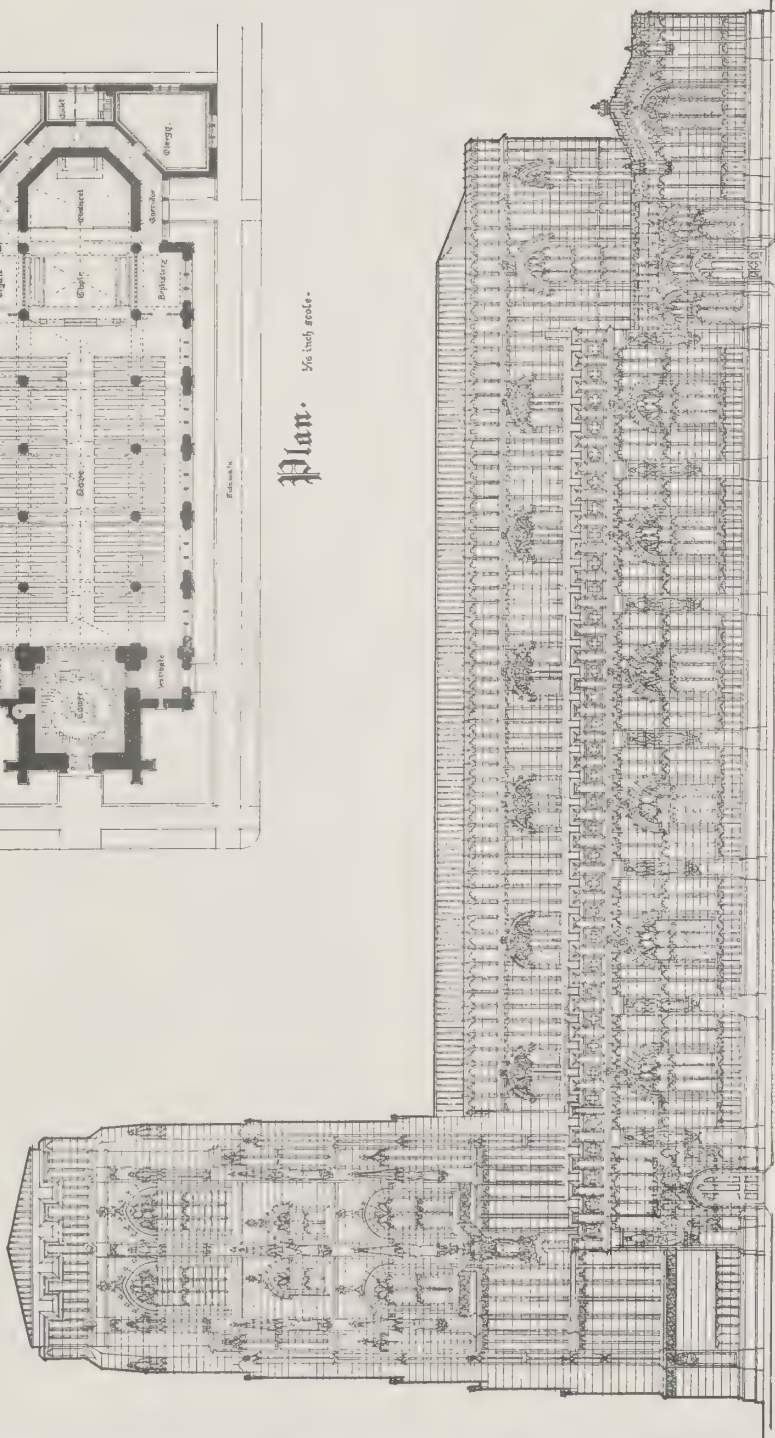


SUBMITTED BY HOMER KIESSLING, BOSTON, MASS.

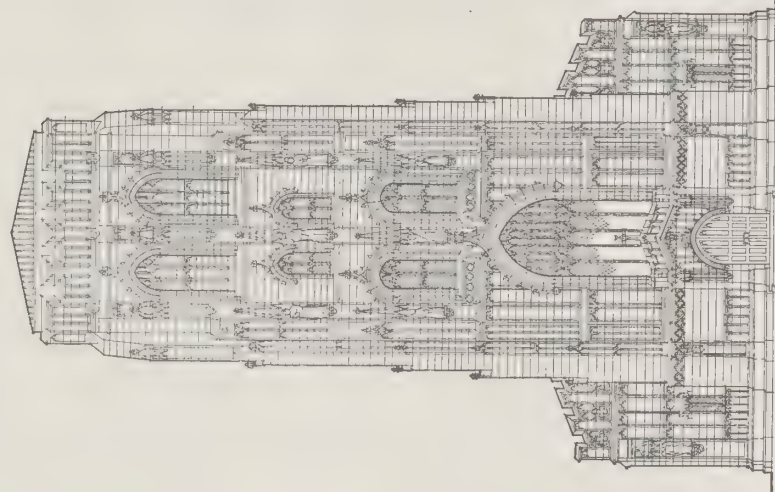


Plan.

1/8 inch scale.



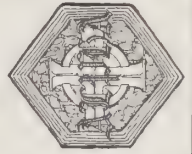
Side Elevation.



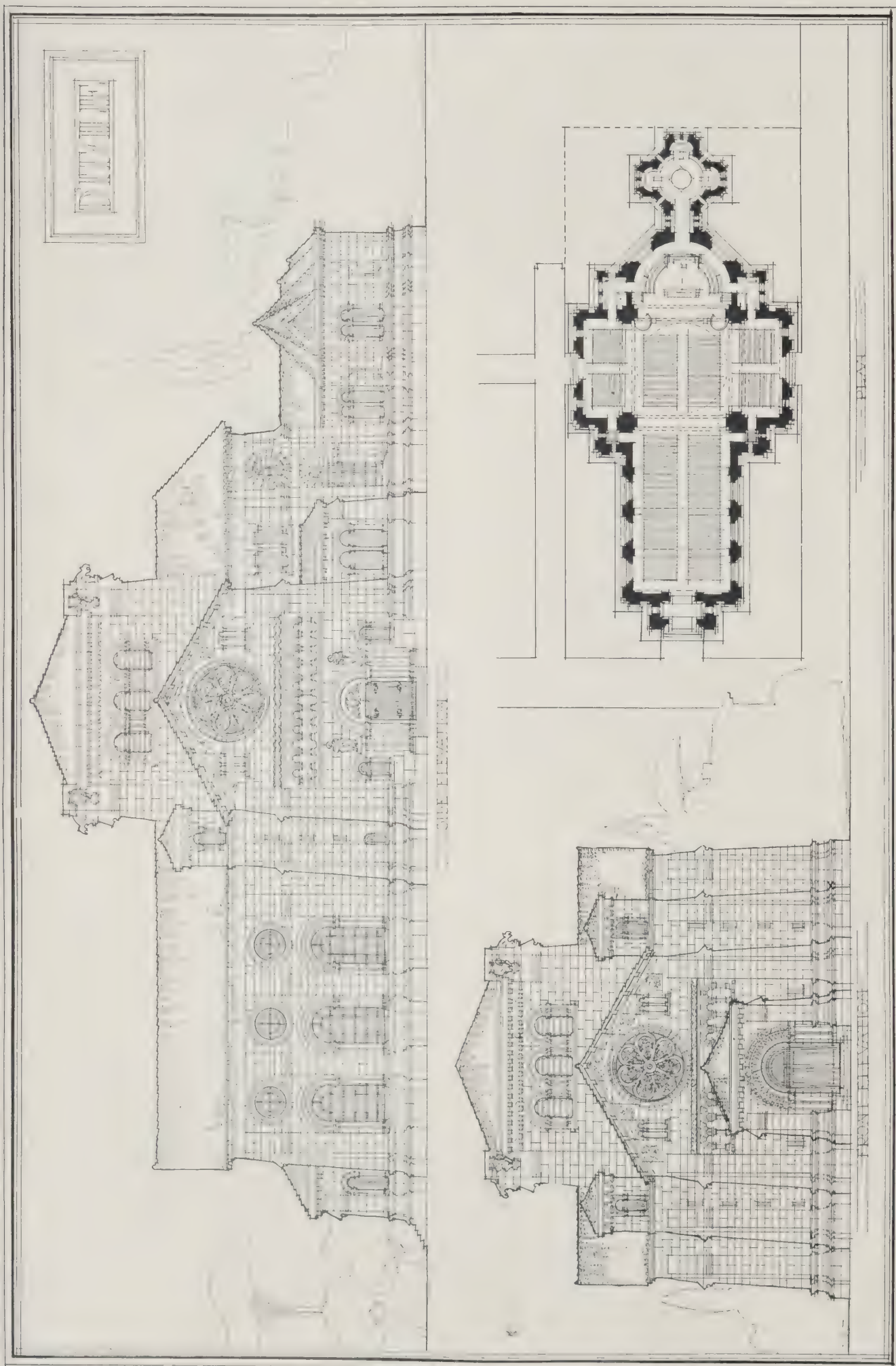
Front Elevation.



Submitted by



SUBMITTED BY EUGENE WARD, JR., NEW YORK CITY.



SUBMITTED BY R. I. DODGE, BROOKLYN, N. Y.

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The following is a brief synopsis of the Architectural Course:

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HISTORY OF ARCHITECTURE: Ancient Architecture; Egyptian; Assyrian; Grecian; Doric, Ionic and Corinthian Orders. Greek Tombs and Theatres; The Acropolis; Roman Architecture; Temples; Theatres; Tombs; Triumphal Arches; Medieval Architecture; Romanesque; Gothic; English Gothic; Early French Styles; Renaissance; Italian; French; Spanish; German; English. Classics. European Architecture. American Architecture: Colonial; Residences; Public Buildings; Churches; Commercial Architecture.

STUDY OF THE ORDERS: The Five Orders: Tuscan; Doric; Ionic; Corinthian; Composite: Character; Proportions; Uses; Typical Examples; Parallel of the Orders; Columns; Pilasters; Base; Shaft; Capital; Architrave; Frieze; Cornice; Aris; Enticis; Triglyphs; Metopes; Volutes; Modules. Proportion of Arches; Doorways; Pediments; Windows; Balustrades; Colonnades and Arches.

WORKING DRAWINGS: Details of Window Frames for Brick and Wooden Buildings; Details of Framing; Floors; Partitions; Joists and Girders; Sills and Posts; Rafters; Attic Floor; Roof; Dormer Construction. Tenon and Tusk Joint. Hanger. Details; Bulkhead; Fireplace. Details of Finish; Sliding Doors; Iron-work in Connection with Framing. Details of Gutters.

ARCHITECTURAL DESIGN: Utility; Effect; Unity; Grouping; Interiors; Exteriors; Orders; Mouldings; Greek and Roman Mouldings; Pedestals; Arcades; Columns; Pilasters; Imposts; Balusters; Doors and Windows; Piers; Capitals; Spires; Form and Color. Ornament: Greek; Egyptian; Roman; Byzantine; Gothic; Italian; French; English. Plans: Rooms; Stairways. Entrance. City and Country Houses; Office Buildings; Light; Heating; Ventilation. Churches and Public Buildings.

BUILDING MATERIALS AND SUPERINTENDENCE: Limes; Cements and Mortars; Strength; Proportions; Data for Estimating Cost. Stone: Granite; Limestone; Marble; Slate; Testing Building Stone. Brick: Paving Brick; Fire Brick; Glazed and Enamelled Brick; Building Brick. Size; Mortar; Construction of Walls; Hollow Walls; Brick Arches; Brick Veneer; Fireplaces. Terra-Cotta; Composition and Manufacture. Durability; Inspection. Setting and Pointing. Examples of Construction. Iron and Steel: Girders and Lintels; Supports; Bearing Plates; Chimney Caps, etc. Laths and Plastering. Metal Laths; Stucco. Concrete. Superintendence: Necessity for Superintendence. Visits; Setting out the Building; Inspecting Material; Inspecting Construction; Costs; Contracts.

STRENGTH OF MATERIALS: Stresses and Deformations; Tension; Compression; Shear; Factors of Safety; Working Stresses. Beams: Simple Beams; Cantilever Beams; Reactions; Bending Moments; Moment of Inertia; Center of Gravity; Safe Loads; I-Beams; Deflection; Beams of Uniform Strength; Continuous Beams. Columns: Cross-sections; Radius of Gyration; Designing. Torsion; Shafts for Transmitting Power; Combined Stresses. Testing Timber, Brick, Cement, Wrought Iron, Cast Iron and Steel. Resilience: Sudden Loads and Impact; Elastic Resilience of Beams. Tension, Compression, Shear and Torsion.

FOUNDATIONS: Staking Out. Excavation; Loads; Artificial Foundations: Timber; Piles; Bearing Power; Cofferdam; Wrought Iron; Cast Iron; Blast Furnace Slag; Retaining Walls; Concrete; Mixing; Laying; Compressive Strength; Period of Repose; Variations of Proportions. Shoring; Needling; Bracing.

MASONRY: Classes of Masonry; Culverts; Wing Walls; Pointing; Grouting; Freezing; Brick Masonry. Cement: Hydraulic; Natural; Portland; Characteristics of Portland Cement; Testing; Effect of Age; Quick and Slow Set; Specifications; Mortar; Proportions; Sand; Water; Strength of Mortar; Shearing, Compressive and Tensile Strength; Effect of Frost; Permanency; Data; Specifications.

CARPENTRY AND JOINERY: Timber; Shake; Knots; Quarter Sawing; Seasoning; Kinds of Wood; Uses. Framed Structures: Joists; Sills; Posts; Studs; Bridging; Flooring; Partitions; Lathing; Trussed Partitions. Roofs: Jack Rafters; Hip and Valley; Mansard; Gables; Construction of Roofs; Shingles; Flashing; Balloon Framing. Siding; Verandas; Arches; Ceiling. Joinery: Joists; Tongue and Groove; Dovetail; Dowel; Mortise and Tenon; Keys. Interior Work: Wainscots; Paneling; Door Making; Sliding and Folding Doors; Windows; Sashes; Glass. Splayed Work. Bending Wood: Veneering. Blinds; Hinges; Interior Finish.

STAIR BUILDING: Materials; Terms; Classification. Construction: Treads; Risers; Stringers; Steps and Platform; Molding; Balustrades; Hand Rails. Straight Stairways; Winding Treads; Winders. Open and Closed Stringers; Curved Stringers. Quarter-Turn Winding; Half-Turn Platform. Winding Stairways; Circular Stairways.

GRAPHIC STATICS: Force Triangle; Polygon; Conditions of Equilibrium; Stresses in Truss, in Polygonal Frame; Reactions of Beams; Concentrated Loads; Uniform Loads; Overhanging Beams. Roof Trusses: Dead and Snow Loads; Stresses; Wind Loads; Fixed Ends; Truss with One End Free. Abbreviated Methods for Wind Stress; Complete Stresses for a Triangular Truss; Ambiguous Cases. Unsymmetrical Loads and Trusses. Stresses; Design Plate Girders.

STEEL CONSTRUCTION: Elements and Functions of Framework; Use of Handbooks; Rolled Shapes; Tables. Beams: Loads; Effect of Openings; Commercial and Practical Considerations in Design. Columns: Connections; Shapes; Selection; Calculation of Section; Tables; Use of Concrete Steel Columns. Trusses: Types; Determination of Loads; Shipping and Erection. Details of Framing; Connections of Beams to Girders and Columns; Plate and Box Girder Connections; Column Caps and Bases; Roof Details. Shop Drawings; Processes of Manufacture; Conventions; Mill and Shop Invoices; Checking; Details of Work. High Building Construction: Steel Skeleton; Limiting Heights; Laws; Effect of Wind. Portal, Knee and Diagonal Bracing. Vibration; Column Loads. Mill Construction: Requirements of Underwriters; Slow Burning Construction; Steel; Details of Connections. Types of Construction.

FIREPROOFING: Material; Parts to be protected; Choice of Material; Use of Material; Floor and Roof Arches; Comparison of Terra-Cotta and Concrete Steel; Expanded Metal; Tests; Suspended Ceilings; Furring; Partitions; Column Coverings; Fire-Resisting Wood; Paint; Metal Coverings; Relation of Construction to Architect's Design. Relation of Construction to Strength of Steel Frame.

CONTRACTS AND SPECIFICATIONS: Classes; Drawing up; Leak; Clauses: Subletting; Assignment. Failure to Complete Work; Insolvency; Insurance; Appliances; Disputes; Condemned Material. Penalties; Cost; Monthly Estimate; Final Acceptance; Definition of "Engineer" and "Contractor." Specifications: Forms; Clauses; Material; Workmanship; Performance; Specifications for Stone Work; Building; Lumber; Cement; Mortar; etc.

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Flatiron Building, New York City, D. H. Burnham & Co., architects; Bellevue-Stratford Hotel, Philadelphia, Pa., G. W. & W. D. Hewitt, architects; Belvidere Hotel, Baltimore, Md., Parker & Thomas, architects; Wabash Station, Pittsburg, Pa., Theodore C. Link, architect; Hippodrome, New York City, J. H. Morgan, architect; Siegel Store, Boston, Mass., Winslow & Bigelow, architects.

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THE BRICKBUILDER.

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CHURCH OF NUESTRA SENHORA DA VITORIA, BATALHA, PORTUGAL.



THE BRICKBUILDER.

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Advertisements will be printed on cover pages only.

TIME IN FIREPROOF HOUSE COMPETITION EXTENDED TO MAY 15.

IN deference to the expressed wishes of many who intend entering the Competition for a Fireproof House (see programme on page 44), but who need more time for a proper study of the problem, the time limit set for drawings to be sent in is extended from April 15 to May 15.

THE PITTSBURG COURTHOUSE.

THE late H. H. Richardson was one of the very few really great architects this country has ever produced. It is therefore of the utmost importance that anything which is done in connection with the Pittsburg Courthouse, his latest and in some respects his most successful piece of work, shall be undertaken only after the most mature deliberation and after consultation with the very best talent the country affords. We cannot see any real necessity for disturbing the building at all. On three sides the courthouse is surrounded by a district which is not covered by expensive or well-built structures, and though the effect of the tower is greatly marred by the proximity of tall office buildings which completely overshadow it from one direction, that is the fault of the office buildings and not of the tower, and the remedy surely is not to destroy the courthouse because its neighbors are

unsatisfactory. The Allegheny County Bar Association has taken the initiative in a very commendable way. It has quoted the opinion of experts to show that any of the proposed changes would not accomplish the results had in view, namely, greater privacy of the courts and increased capacity, while any attempt to alter the building would hamper the work of the courts for at least three years and cost out of all reason. They show in conclusion:

(1) That the proposed alterations of the courthouse would amount to the destruction of the architectural beauty of the present building.

(2) That the cost of procuring the additional room in the method prescribed would be excessive and uneconomical.

(3) That the public convenience would be better subserved by building a separate building or buildings to take care of the offices which are not essential to the transaction of the business of the courts.

THE National Sculpture Society of New York has sent out a brochure on the subject of “Art as an Educational Force and a Source of Wealth.” It is very fully illustrated with views of the most notable of the municipal art work abroad and forms an excellent adjunct to the agitation which is now being so pronounced in most of our cities towards the improvement of municipal art conditions. The art in the Congressional Library at Washington was only seven per cent of the total cost of the building. The art of the Hotel de Ville at Paris cost twelve and one-half per cent of the total cost, and the Sculpture Society makes a good recommendation that by proper enactments ten per cent of the total cost of every public building should be expended in historic art, sculpture and painting, and that of the total cost of municipal government a definite, even though small (say one-half to one per cent), appropriation be devoted to beautifying the city by suitable landscape and monumental treatment of its parks and streets.

WE have received the Year Book of the Columbia University Architectural Society, which presents in excellent form examples of the work of the architectural students in the various years. Such publications are thoroughly to be commended. A certain amount of judicious publicity is a distinct encouragement to the students and serves as a valuable record from year to year of the progress of the university. In this case Columbia certainly has cause for nothing but approval of the work of its students.

Ecclesiastical Architecture.

SOME NEEDED AMENDMENTS.

BY RIGHT REV. C. K. NELSON, BISHOP OF GEORGIA.

THERE are problems upon which the profession does not appear to have reached an agreement. First, the well-known chancel arch, revered by many because it seems to introduce properly a choir reduced from the nave. Ecclesiology suggests this reduction on the ground that they who enter here are a chosen few, the *kleroi* (clergy) and the communicants. We make the issue that this is a blunder except where there is a structural rood screen of great solidity. The acoustics, the value of the singers' dignity, the grandeur of the high altar and its surroundings are best subserved by carrying nave walls at practically the same width and the nave roof at the same height to the extreme east end of the building. The trial once fairly made will debar any future experiments, except in small buildings.

Second, the east window. Many will be found to inveigh against the innovation of omitting this legendary feature of Anglican churches. Let me ask them to think that three lancets of very dull glass in an English atmosphere, screened on the outside by climbing ivy, is a totally different thing from the American copy, large glaring windows backed by a strong eastern sun, painful to the eyes of the congregation, and utterly ruinous to the artistic effect of the sanctuary, worse in its way than a great plate-glass mirror over a fireplace,—one of the most inartistic productions that has ever been invented. We plead for the abandonment of the great east window, or at the least for a modification which places the openings as far as possible above the floor. The erection of a chapel across the east end of the building has this in its favor, that it usually destroys the possibility of one of these distracting features of American churches.

Third, the organ. Take us back to the choir in the west gallery,* set your instrument anywhere you can find place, but do not bring it under the arches of a choir aisle, the space usually left by narrowing the chancel, opposite which, for a very apposite purpose, is the vestry.

Fifty per cent of the value of the organ is lost and fifty per cent of extra cost added by the common arrangement. The contest over this question has begun in England; we hope it will appear in America. Let us give the organ a mouth out of which to speak. Let the loft be above in a transept, range the pipes on either side of the choir (overhead), but in no case shut up the instrument behind piers and arches. It will not be found impracticable to place the organ in a gallery on pillars, over the west door (not in the narthex), for the effect there will be to drive the congregation in the same direction that the choir leads (thus solving to a great extent the complaint that congregations nowadays will not sing), and a trial will show that an organ thus set is by no means *away* from the choir in the ordinary American parish church.

*There are worse things in church arrangement than a choir gallery and organ at the west end, against which the witticism of Bishop Wilmer of Alabama was directed. As he looked up to the supporting arch of this part of the church, some one asked him what he was thinking. He replied, "An inscription for that arch." "What should it be?" asked his friend. The Bishop replied with characteristic solemnity, "To the glory of the choir and in memory of God."

NOTES ON ECCLESIASTICAL ARCHITECTURE.

BY REV. DANIEL DULANY ADDISON, D.D.

THE adaptation of ecclesiastical architecture to the spirit of the time is dangerous business, because the spirit of the time is so illusive, often like the fashion of a day; and there is a past and future to be taken into account. The spirit of a generation, even if we think we have found it, may be the last thing to be considered because of its transitory character. The spirit of the centuries, the trend of the universal religious soul, is of more account. There are certain principles of reverence and aspiration which have expressed themselves among Anglo-Saxons that are safer guides than the commercial ideals of a limited epoch. If one ignores the past and makes concessions, a modified and restrained vaudeville theater, with gilt and realistic frescoes, might be the model of the modern church, or a well arranged lecture hall, or an elongated room, so that everybody may crane the neck of curiosity. But a church, the shrine of worship and inspiration, connotes to Anglo-Saxon ideas relating to humanity as a whole, and ideas of God.

As to style, therefore, that which has appealed with unfailing persistence to the Anglo-Saxon religious spirit seems the best adapted. We are governed by English ideals, in literature, government and ethics, and probably we will be so governed. Let us therefore seek the best in England for our inspiration, rather than tamper with the Classic lines of Greece or the domes of Mohammedan mosques.

The term "Gothic" is vague, but it suggests that English architecture which is congenial to the Anglo-Saxon religious spirit. A church should be lofty in the interior, giving a sense of spaciousness, mystery and uplift. It should have length, giving perspective and a feeling for distance. Pillars and columns should never be sacrificed to any idea of utility and the better view, for with the arches in stately succession they suggest the orderliness and simplicity of religious truth.

The chancel with sanctuary and altar should never be shallow and stunted in appearance. The chancel arch has been a most unfortunate tradition. This hiding in a cavelike orifice, with low roof line and contracted walls, the essential glory of the church, its choir and altar, is a strange perversion of the instinct of worship. At the very point and climax of the building there should be a widening, an elevation and deepening. So often there is a contraction and compression of this feature, into a decorated hole in the wall. Let the chancel be the height of the church, and let the width of the transept be continued up to the sanctuary, so that there may be vistas and spaces, thus giving the expansion and size necessary to a genuine idea of the ultimate use of the church; a building arranged in stages of religious progress, up the nave to the widening transept, and the chancel, deep and lofty, helpful to the soul in seeking the Eternal.

A church should never be an academic copy of anything. It must be true to the spirit of worship, not to the letter. Take some theme as a starting point, and let it grow in beauty and truth as the genius of the reverent architect indicates and as the need of the special parish church requires. Freedom of growth and of adaptation to the past and future, as well as the present needs of the

particular branch of humanity for which it is built, must be encouraged. The church should be individual, having its own marks and messages, remembering what men have done before. Let no architect think that he has done a good piece of work if he has copied an Oxford tower or worked in a bit of Canterbury. He must not make a patchwork, but a harmonious whole infused with his own and the people's reverence.

A church is not built solely for the preacher's discourse. If any preference is to be given, it should be to the total effect, on the emotional, æsthetic, historic and worshiping consciousness of the people. Instruction can never take the place of adoration and the eager presenting of one's life as a living sacrifice in the house of God. A church is not the house of man, adapted to his eccentricities and built to suit his ideas of coziness, sociability and education, but it is the house of God, built to give our best to the Creator, — an expression of Eternal elements within us.

The educated and understanding architect should never give way before the amateur clergyman or the ignorant layman. To save the city from monstrosities, the architect should firmly hold to the best traditions of his art; courageous authority is a strong antidote to ignorant caprice.

The day of great churches in America has yet to come; but it will come. The spirit which builds the magnificent buildings of commerce and finance must soon find expression for its deeper instincts in structures to the glory of God. There will be the chance to build for the fundamental and vital forces resident in humanity structures which will appeal to the modern spirit and be in consonance with the best religious impulse of the race. Whether it be the village church or the cathedral, the thought must not be that you are building for the utility and pleasure of men, but for the glory of historic Christianity and the Eternal Father revealed through Christ.

THE TEST OF CHURCH ARCHITECTURE.

BY REV. HERMAN PAGE.

THE first essential to any true understanding of church architecture is that there shall be a clear comprehension as to the true purpose of a church building. Everything depends on this. Practically there is great confusion of mind among clergy, laity and architects as to the idea which a church should express. With the happily growing belief that religion must touch life in all of its phases there seems to be much doubt in the minds of many people as to the difference between a church and a concert hall, a Young Men's Christian Association building or a clubhouse.

In an earlier article Bishop Potter has pointed out with much force the fact that the true church is a building that stands clearly for God's presence in the world. It must be a building which instantly makes one think of God when he passes it. Supremely must it be a building which makes him feel God's presence when he enters it. This is the first and last test of a good church building. True indeed it is that the amusement park belongs to God as certainly as the cemetery. Yet we do not care to have it

laid out in the same fashion. We do not expect a railroad station to look like a theater, though both buildings are desirable. We expect a hotel to differ from a private house, though both buildings are the homes of men. So the church must have its own distinctive architecture, by which it shall unmistakably declare God's presence in his world.

The true church building, then, must have a monumental character. All its lines and all its arrangements must conduce to one end, — the symbolizing of God's presence. The church, be it large or small, that fails in this respect fails entirely. It means everything to realize this truth. When this is clear, other difficulties resolve themselves, as will be apparent.

First let us notice the much discussed questions as to columns, slanting floors and a circular arrangement of seats. Why is there such discussion? Simply because men are not clear as to the purpose of a church. Many think of it primarily as a meeting place or an auditorium, the first requisite being that they shall see and hear the minister and the musicians easily. Consequently the test of every nook and corner of the building is whether one can see and hear well from it. Of course columns are an obstruction; and slanting floors and a circular arrangement of seats are a great advantage. Now it is desirable — exceedingly desirable — that in a church as many people as possible shall see and hear the minister and singers well; but there is a far more important question than this. It is, do the columns and slanting floors and circular theatrical seats help or hinder those present in realizing the presence of God? There can hardly be but one answer. Such floors and seats at once suggest the theater and the concert — not God's presence. The huge auditorium without columns and arches — with every corner visible from every seat — is entirely devoid of the variety, the light and shade, the glory and the mystery that characterize the relations of God with his children. No American who has worshiped in a church of the *auditorium* type fails to be impressed and uplifted by the variety and mystery of the great European churches, with their many columns and aisles, their transepts and their chapels. The sense of the unseen which is behind the columns, so mysterious yet so near, makes us realize as nothing else can the presence of the great Unseen One who is the source of all life and hope. A large church without columns is usually a dull and uninspiring place. On the other hand, the presence of such columns, while they may spoil a few seats for seeing and hearing, gives a variety which is indescribably valuable in a church.

Church committees recognize the value of lofty walls, towers and fine windows. It is to be hoped that they will soon recognize the far greater value of columns, so that they will be willing to spend money on enough extra floor space so that they can have columns and *also* have as many good sittings as they need.

The problem is the same when we turn to the question of the chancel. Is the building to stand for God or simply for seeing and hearing? If it is to stand for God it is essential that the chancel be large and glorious. It should be the center of all eyes and thoughts, and the altar should be its focal point. This is no mere question of ecclesiastical doctrines. It is a simple matter of archi-

ture. Shall the central idea of a church building inhere in the minister placed on high before the congregation, or shall it inhere in the structure of the building itself, to symbolize the fact that there is One present before whom minister and people shall humble themselves and whose service is for minister and people alike? If the church is to stand for the presence of God it must emphasize to the eyes of all something stronger and holier and more glorious than any man. Hence the need of an impressive chancel and a splendid altar.

A few words may be added as to the best style for church architecture in this country. We may assume that any style which uses columns and emphasizes the chancel is good. There is room for the Roman and Byzantine forms, for a restrained Renaissance and for all the varieties of Gothic in a country like ours which has a climate as varied as Europe and people almost as divergent. St. Augustine and Pasadena hardly call for the same type of architecture as Chicago and Portland.

Conditions of climate, people, building lots and environments must all be considered in the planning of the right church building. When all this has been said, however, it must be admitted that our typical civilization is busy, aspiring and ambitious. It is full of lights and shadows and is infinitely varied. The bulk of our people, moreover, live in the region of smoke and snow. There is surely no architecture which so completely expresses all these facts as does the Gothic. It is strong and aspiring. Its variety is endless. Light and shadow are of its very nature. The snow slips off its steep roofs. The smoke and grime of the great city simply enhance its ruggedness; and it seems almost like a growth of the soil in our country landscape.

When we consider also that Gothic is essentially the architecture of our Anglo-Saxon forefathers, and that the genius of our American civilization is essentially Anglo-Saxon, there are surely the strongest reasons for feeling that the true architectural style for our churches — as a matter of heritage and as a matter of true expression — is pre-eminently the Gothic architecture.

BUILDING A CHURCH.

BY REV. JOHN W. SUTER.

THE earliest name for a Christian was disciple, and the earliest name, perhaps, for Christ was Teacher. The Church which perpetuates His life and endeavors to make it real to humanity is likewise the teacher. The term *Ecclesia Docens* is more than merely an indication of part of the Church's activity. It is, rightly understood, an expression indicative of the Church's essential character and vital function.

It is possible to carry over this thought into the housing of the Church. Every church building should be an *Ecclesia Docens*. In developing this idea the following elements are especially to be emphasized:

First. The church building should teach reverence. It must be a building which in itself, as one enters its door, invites to worship. It is not merely that one is to be struck by the beauty of his surroundings, or to be impressed with the æsthetic value of any detail; it is the

total impression which must work its effect. It makes it instinctive for the man who enters a true church's door to uncover, and then to hush his voice, and finally to kneel. Moreover the people of America are coming to require this thing of the church building more and more. They are desirous of the privilege and education of going to a church that compels them to feelings of reverence and to acts of worship. The demand for a teaching church in this sense is one that cannot be escaped; the people who build churches will have to reckon with it. In a recent article in the *Outlook* the Rev. Gerald Stanley Lee puts this thing in his inimitable way. "A man," he says, "cannot feel himself moved to reverence when he is asked to drop into a back parlor, called a church, and to look at a painted picture of the Holy Ghost as a dove over the preacher's head. He does not seem to be in the presence of an infinite and masterful God. The church of the future should be one that suggests nations and empires, centuries of love and sacrifice and patience, and it shall gather the great cities like children about its feet."

Second. The church building that is true to its function must provide the proper framework for the speaking voice of the preacher. It is true that the age is feeling after a deeper feeling of reverence and expects its church building to teach it that, but it is equally true that the age is waiting for the voice of the prophet, and expects its church building to be a place where that voice can be heard. So far from its being true that preaching has had its day, it has not yet begun to realize its possibilities. For a building which presents the aspect, as one enters its door, of a theater or lecture hall, to call itself a church is monstrous. The stage and the sloping floor and the amphitheater of seats have their uses and advantages, but it is not possible to combine them in any way and to find the result a church. But it is not to be forgotten that it is equally monstrous for a building, however lofty and impressive and ecclesiastical in appearance, to call itself a church if it has no pulpit, that is, place where a man can stand and speak the message so that every listener in the church can hear it. The teaching church must surely be the place where the truth is taught; and while truth may be taught in many ways, the central and controlling method must forever be the method of human speech. It is not necessary to argue this point. The chief problem of the architect is undoubtedly this: he is to make a house which shall serve as the dwelling place of the teaching church, a place where the Christian, who is always the disciple, the learner, may find himself at home, and where he will meet the Christ, who is forever the Teacher and Master. And if the building is truly to symbolize the Church which is to worship beneath its roof, it must somehow combine in its construction these two essential teaching elements. It must by its very being teach men to worship, and just as truly by its very being invite men to listen to the spoken word of God.

Neither the "back parlor" nor the lecture hall can be a church and bring a man to his knees, but no more can a stately pile of aisles and arches that can house only a spectacle and never an "audible," and where the word from the lips of a man becomes a jumble of echoing inco-

herence. "In the church," said St. Paul, "I had rather speak five words with my understanding than ten thousand words in a tongue."

It is quite possible to speak of either of these elements in a way to belittle them or to brand them as selfish ends. The sense of worship may be faulted as an emotional sentiment, and the desire to hear a sermon may be called merely a thirst for information or for a sensation. Either one may be debased, either one may be conceivably the expression of a selfish wish for a pleasurable experience; but we know that at heart these things are essentially great, and that they are equally the demands of a human soul for the best, not merely for itself, but that a man may turn that best to the service of his fellow man and to the glory of his God.

Third. While the successful combination of the two elements spoken of above constitutes the chief problem of the architect, there is another possibility, far from unimportant, which the idea of the teaching church suggests. This possibility is the element of distinctiveness in any given church building, that is to say, the branch of the Church to which the parish belongs, the locality in which it is placed, the development of its own special history and all the elements of circumstance surrounding the given problem, ought to give the church building an individual expression which is the outcome of its own unique personality. The Christians of America have been, as a rule, totally indifferent to adequate architectural expression or to æsthetic or symbolic considerations. There have been bodies of Christians who have taken delight in exalting the significance of the Bible and its central place in the life of the Church, but as a rule they have never had any distinctive place for the book in their church buildings, at any rate no impressive symbolic emphasis upon its importance. There is a great body of Christians that believes in immersion as the true method of baptism, but in spite of this splendid opportunity for baptistries, these are practically non-existent in their churches, and Christians of this type are quite content with tanks concealed under platforms. Illustrations of this sort might be multiplied, but the same neglect of the teaching opportunity is shown when one considers local history and characteristics. History is short in America, but not so short as to deserve neglect. Speaking generally, it would seem fair to assert that an architect called upon to build a church should first of all devote considerable time to a study of the situation, meaning by situation not merely the shape and size of the lot, the possibility of local material, the requirements of the given congregation and the type of architecture which the parish claimed as its choice, but something more than that. He should familiarize himself with the history of that branch of the Church of which the given congregation is a member, with that special parish's own local history and with the general topography and history and community character of the place in which the church is to stand. He should also consider the possible symbolism which the church's name may suggest or the special sides of work or teaching with which it has been occupied. By remembrance of this sort of teaching possibility a church building may stand, not only as an example of a certain type of architecture, but may attain to distinction as the speaker in its own place of a special message.

Boston Brickwork. I.

COLONIAL ERA.

THE expression "Boston brickwork" is nearly a repetition; if the phrase "red brickwork" were used the tautology would be complete. New York implies brown stone; Chicago, light stone; and San Francisco, wood; but the red brick of our forefathers is as popular to-day in the Puritan capital as it was two centuries ago. The Bostonian reputation for reserve and caution is evidenced nowhere more than in the thousands of modest façades which line the most important as well as the minor streets. Indeed it is not an exaggeration to aver that, as a general rule, streets on which are built the homes of the wealthy and solid citizens are of a practically unbroken red, while the use of light-colored brickwork is left much to the architectural "half world" of Roxbury and South Boston. Like all rules, this has its meritorious exceptions, but we fancy it is a correct statement of the situation; and the characteristic thing about this situation is that the rougher and poorer the quality of the bricks the greater is their popularity. While sandstone and marble are hardly good enough for the New Yorker of even comparatively moderate means, the Boston millionaire insists on the usual selected red eastern water-struck brick for the façade of his mansion, sometimes, as a concession to the frivolous architect, laid "Flemish bond with black headers." Our principal avenues thus have a distinctly provincial aspect entirely unworthy of the city's importance, and this aspect is enhanced by the narrow frontages of the buildings. As some compensation for this self-consciousness in architectural expression it must in justice be said that speaking in a general way Boston architecture is characterized by a dignity, a self-control and freedom from mere flippancy which almost always impress the stranger most favorably. Moreover, the commercial structures, as investment buildings, are conceived in a somewhat more liberal spirit, in order to attract a prospective tenancy, so that the business part of the city has, aside from its narrow and winding streets, a fairly good appearance, although, owing to the height limit of one hundred and twenty-five feet, the majestic sky-scrapers of other American cities are wholly lacking.

Fifty or sixty years ago the city of Boston must have presented a much more uniform and organic appearance than at present. In 1840 to 1850 the population was something over eighty thousand. Seen from any direction the tide of houses flowed gently up the slopes of the three hills culminating in the Bulfinch dome, "resting like a mural crown upon a kingly city." The buildings were closely built, rarely over three or four stories in height, with pitched roofs, and the public buildings—city hall, market house, hospitals and churches—were planned in scholarly fashion and rose above the ordinary roofs in their proper proportions.

While Boston has no "sky-scrapers" within the commonly accepted meaning of the term, the domes and spires, which once gave the city a distinctive profile, are now dwarfed and obscured by commercial structures of considerable height; and instead of setting an example of purity and elegance in design, the municipal and other



1. HOUSES WITH RIDGE POLES PARALLEL TO THE STREET.



2. MOUNT VERNON STREET, THE GRECIAN PORCH.



3. A TYPICAL OLD BOSTON DOORWAY.



4. BEACON STREET, THE INCHES HOUSE.



5. DOORWAY OF THE INCHES HOUSE.



6. HOUSE WITH PORCHES OF SLENDER COLUMNS.



7. NEW HOUSE ON COMMONWEALTH AVENUE.



8. BEACON STREET, THE AUSTIN HOUSE.



9. PORCH OF THE AUSTIN HOUSE.



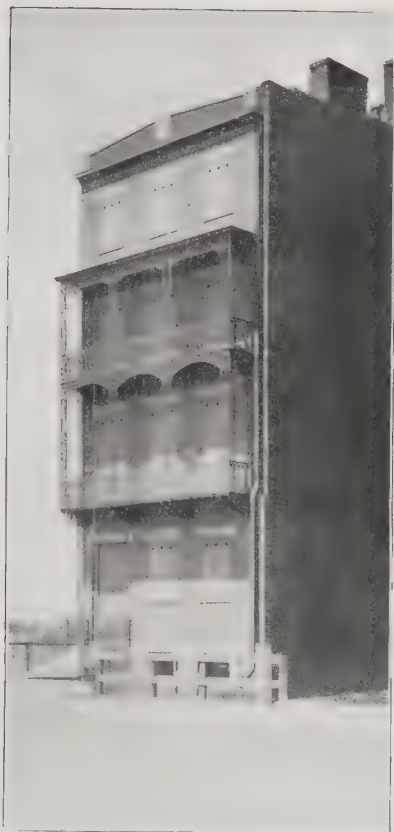
10. BEACON STREET AND HANCOCK AVENUE.



11. OLD HOUSES OPPOSITE THE COMMON.



12. HOUSES ON BEACON STREET.



13. BAY STATE ROAD.
Reappearance of Balcony Type.

the State House which so much resembles famous Piccadilly, or Tremont Street from Winter to Boylston which recalls Princes Street in Edinburgh, or the Parisian perspective of Arlington Street. These and a few other prospects, however, fail to redeem the hopeless confusion of the city in general, and owing to the injudicious enactment of restrictive ordinances which prevent proper development of some of the best sites there appears to be little prospect of improvement in this direction.

The characteristic Boston house of early days stood with ridge pole parallel to the street. A balcony of cast iron in Grecian pattern ran along the block at the level of the second-story window sills, and was the only attempt at ornament. In a few cases there was a Grecian porch with fluted columns of brown sandstone or white marble, but usually the door was recessed in a simple semicircular arch or plain linteled opening. On account of the stone being set "on end" most of these columns, which still remain, are in a much deteriorated condition. These houses have now mostly disappeared from what has become the business section, but hundreds of them remain on Beacon Hill and in unfrequented streets of the North and West ends. Well-preserved relics of colonial dwellings which possess any striking individuality are rather scarce at the present day, although a large number of houses from eighty to one hundred years old are still standing. The long slope of Beacon Street opposite the Common and the still steeper streets in the rear contain a number of good colonial doorways with side lights and occasionally an interesting façade. The Inches house, some time remodeled and with a story added in perfect taste by Hartwell & Richardson, is probably the best and still retains its walled garden, sheds and stabling in the rear. Lower down on Beacon Street

public buildings are generally content to follow in the wake of private architecture.

As a result the present aspect of Boston is that of a rather ill-arranged and congested mass of buildings in which the most important buildings are generally found fronting on the narrowest streets. This mass is totally devoid of vista or symmetry, and would be devoid of any relief whatever were it not for the noble expanse of the Common and Public Garden in its very heart, which, though badly laid out, gives rise to several interesting situations along the bordering streets. Such are the stretch of Beacon Street from Charles Street to

is a house with a porch of slender columns, a reminiscence of which has lately appeared on outer Commonwealth Avenue.

Probably of all the houses on the Beacon Street slope the old Austin house excites the greatest admiration. Its ample and dignified façade of age-mellowed brick, with its delicate and refined detail, is heavily overgrown with wisteria, whose blossoms cluster around ancient window panes, almost matching the tints of the old magnesium glass which the sun's rays, through the summers of a century, have turned to a rich purple.

If space would permit it would be interesting to present photographs of every house along the slope from Park to Charles streets. A few will suffice to illustrate the various types. The house corner of Beacon Street and Hancock Avenue is a stately mansion of the old school, say about 1840, with a graceful balcony. No. 11 shows the iron balcony reproduced on a still older house, and No. 13 is introduced to show the outcropping of the same motif, half a century later, on a new house on Bay State Road. No. 14 is from Mount Vernon Street near by, and again illustrates the familiar type.



14. MOUNT VERNON STREET.

Before passing to buildings of modern design a few views of old Boston meeting-houses are introduced. A dozen or more of these interesting structures remain and yield nothing in dignity to the ecclesiastical architecture of our own day. The motif is practically alike in all, — an auditorium consisting of a large hall with pitched roof, at the front of which is placed centrally a tower or belfry, which may or may not terminate in a spire. These buildings were usually inspired by the London work of Wren and Gibbs, and above the roof of the main church were commonly executed in wood.

The lower portions were built of the small rough brick of that period and, owing to the disproportionate expense of masons' and stonecutters' labor, were but little ornamented. Practically all of these churches were painted outside, excepting the old West Church, now standing and used as a branch of the Public Library, whose brick walls have aged to a charming tone. These remaining spires,



15. OLD SOUTH MEETING-HOUSE.



16. PARK STREET MEETING-HOUSE.



17. HANOVER STREET MEETING-HOUSE.



18. OLD NORTH CHURCH.

especially those of the Old South, Old North and Park Street churches, are of much sentimental as well as architectural importance. The historic Old South spire, though low and simple, has a graceful loggia, which gives a pleasing play of light and shade. That at Park Street is much more elaborate and is an extremely attractive piece of work.

In few cases can it be said that the tower is well joined to the church proper, the study of the architect having been mainly expended on the detail and profile of the spire itself. In the case of the Park Street spire much care in design is evidenced, not only by the rather elaborate scheme, but by such refinements as inclining the axes of the columns toward the center and by the careful detailing of the pediments and balustrades.

The meeting-house in Hanover Street has a front in two stories which, in its high-shouldered fashion, seems to recall some of the Jesuit work of Rome.



19. STATE HOUSE.

In this connection it is proper to mention the State House with its extension. The "Bulfinch front," though not free from serious architectural defects, is undeniably one of the most imposing as well as pleasing architectural compositions that the early years of the Republic produced; and if the colonnade were executed in stone or marble instead of wood it might take rank as one of the country's important buildings. As it is, its effect is much damaged by the frequent painting it receives in colors according to the varying tastes of successive commissioners. The problem placed before the architects of the vast extension was a difficult one. Its solution can hardly be regarded as satisfactory, though in fairness to them due allowance should be made for the many obstacles in their way.

I do not want art for a few, any more than education for a few, or freedom for a few. No, rather than art should live this poor, thin life among a few exceptional men, despising those beneath them for an ignorance for which they themselves are responsible, for a brutality that they will not struggle with rather than this, I would that the world should indeed sweep away all art for a while, as I said before I thought it possible she might do; rather than the wheat should rot in the miser's granary, I would that the earth had it, that it might yet have a chance to quicken in the dark.—WM. MORRIS, in "The Lesser Arts."

An Important Test of Fireproof Construction.

THE Pittsburgh Terminal Warehouse and Transfer Company is about to erect a system of forty warehouses along the Monongahela River front in Pittsburgh, under the direction of Charles Bickel of Pittsburgh as architect, and Kindel & Glaffey as engineers. These buildings will cover an area of 370 x 390 feet, with a basement and six stories. The exterior walls are to be of brick, no stone being used in the construction, even the sills being of terra-cotta. The total height of building, from the railroad track to top of parapet wall, is 90 feet. The first floor is arranged for a terminal station, with six tracks entering the building and wide receiving and distributing platforms. The building throughout is of skeleton construction, with Z bar columns resting on concrete footings and concrete piles, the floors being calculated for a live load of 350 pounds per foot with a factor of safety of 4. The construction throughout is strictly fireproof. The floors are divided into square bays. In each bay four terra-cotta arches will be carried across each bay on the diagonal, springing from the bottom flanges of the corner beams and with a rise of 18 inches and bearing at the center against eight-inch I beams, cambered to conform to the rise of the arches, bearing on the center of the sides of the bay and intersecting at the crown of the arches. By this method of construction it will be possible for one entire bay or floor to collapse in the event of some heavy object striking the arch and its failure would not influence the adjoining bays; also, the diagonal arches will transfer the loads in great part directly to the columns, thus permitting of much lighter beam construction than is usually employed. The arches will be of hollow porous terra-cotta blocks 6 inches deep, 8 inches wide, and not over 12 inches long, set with broken joints. The tops of the arches will be leveled with concrete and receive a two-inch cement finish.

The roof is constructed on the Johnson system, with a wire mesh laid over centering, imbedded in three-quarters of an inch of one to two and one-half Portland cement mortar, upon which will be laid the cement blocks covered with cement mortar and made smooth for composition roof.

In order to demonstrate the capacity of the floors, a most careful test was made at Pittsburgh by a committee, consisting of Professor Ira H. Woolson of Columbia University, W. L. Lemmon, consulting engineer for the National Board of Underwriters of New York, and W. D. McGill, chairman of the Local Underwriters' Board, and the fire marshal of Pittsburgh. As a result of these tests and of the thorough fireproofing qualities of the building the insurance rates will be the lowest ever given upon any building of this class in the country.

Professor Woolson's official report on the test is given herewith:

COLUMBIA UNIVERSITY, DEPARTMENT OF MECHANICAL
ENGINEERING, TESTING LABORATORY.

Report of a fire, water and load test made upon a hollow tile groined arch floor constructed by the National Fireproofing Company, at their plant in Pittsburgh, Pa.

Tested December 7, 1904. Test started, 11 A. M. Water applied, 3.16 P. M. Age of floor when tested, twenty-four days.

METHOD OF CONSTRUCTION.

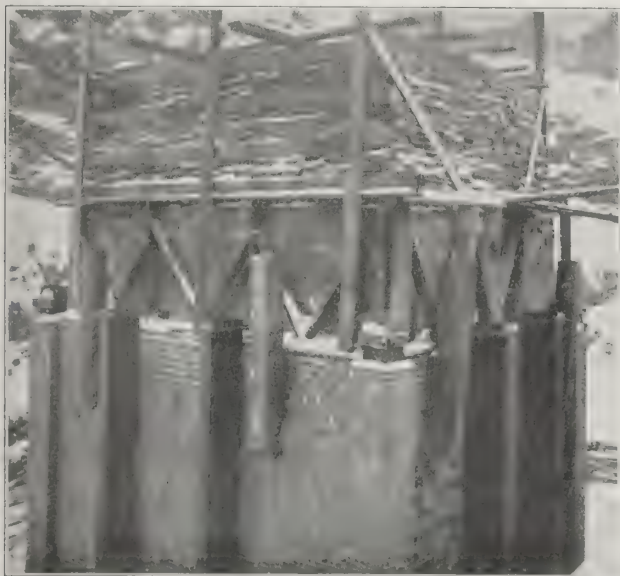
The test building was of steel frame construction 20 x 22 feet, with corner posts and I beam girders between. The longer girders were twenty-four inches deep, and the shorter ones eighteen inches deep. This



BUILDING BEFORE TEST, LOAD OF 270 POUNDS PER SQUARE FOOT.

frame was encased by a thirteen-inch brick wall on two sides and by a nine-inch combination tile and cement wall on the other two sides; the object being to study the relative merits of the two types of walls as fire barriers.

The floor to be tested constituted the roof of the test building. It was constructed by forming a groined arch of six-inch hollow tile between the girders, with a rise of seventeen inches at the crown. Above the tile was



AFTER TEST, LOAD OF 1,000 POUNDS PER SQUARE FOOT.



SHOWING METHOD OF METAL CONSTRUCTION.

concrete filling of about four inches over the crown and eighteen inches at the haunches. The arches were sprung from the corners of the rectangular floor space instead of the sides, thus throwing the greatest thrust to the corners, where the framework could best resist the load.

For purpose of reinforcement, two eight-inch beams were put in between each pair of girders at the middle and meeting in the center of the floor span. These beams were cambered to the curvature of the arch and divided the test floor into four equal parts. They were encased by the floor tile.

The construction was practically a reproduction of one unit of the floor system to be used in the new Pittsburgh Terminal Warehouse and Transfer Company warehouses, in which there are to be 800,000 square feet



INTERIOR OF TEST CHAMBER AFTER FIRE.

of floor space, all divided into spans 20 x 22 feet.

In the warehouse building the thrust on one side of a girder would be resisted by the stiffness of the girder itself, supported by the thrust on the opposite side, due to the adjoining floor span. To approximate these conditions in the test building, large I beams were placed vertically against the outside of the walls, two on each side, spaced to give reinforcement to the girders at points about one-third of the span from each corner post.

These I beams were securely anchored at the bottom and were fastened in pairs across the building just over the roof by large tie-rods with turn-buckles to bring them snugly to place. Similar tie-rods were put up in diagonally between the corner posts, the effect being to hold the main girders securely in place and prevent possible deformation. Full details of the construction are shown in the illustrations.

The floor proper of the test building was formed of an open checker-work of brick, the same as a kiln floor, and upon this the fire was built. The ceiling was fifteen feet four inches above the floor. Suitable draught openings, smoke flues and firing door were provided.

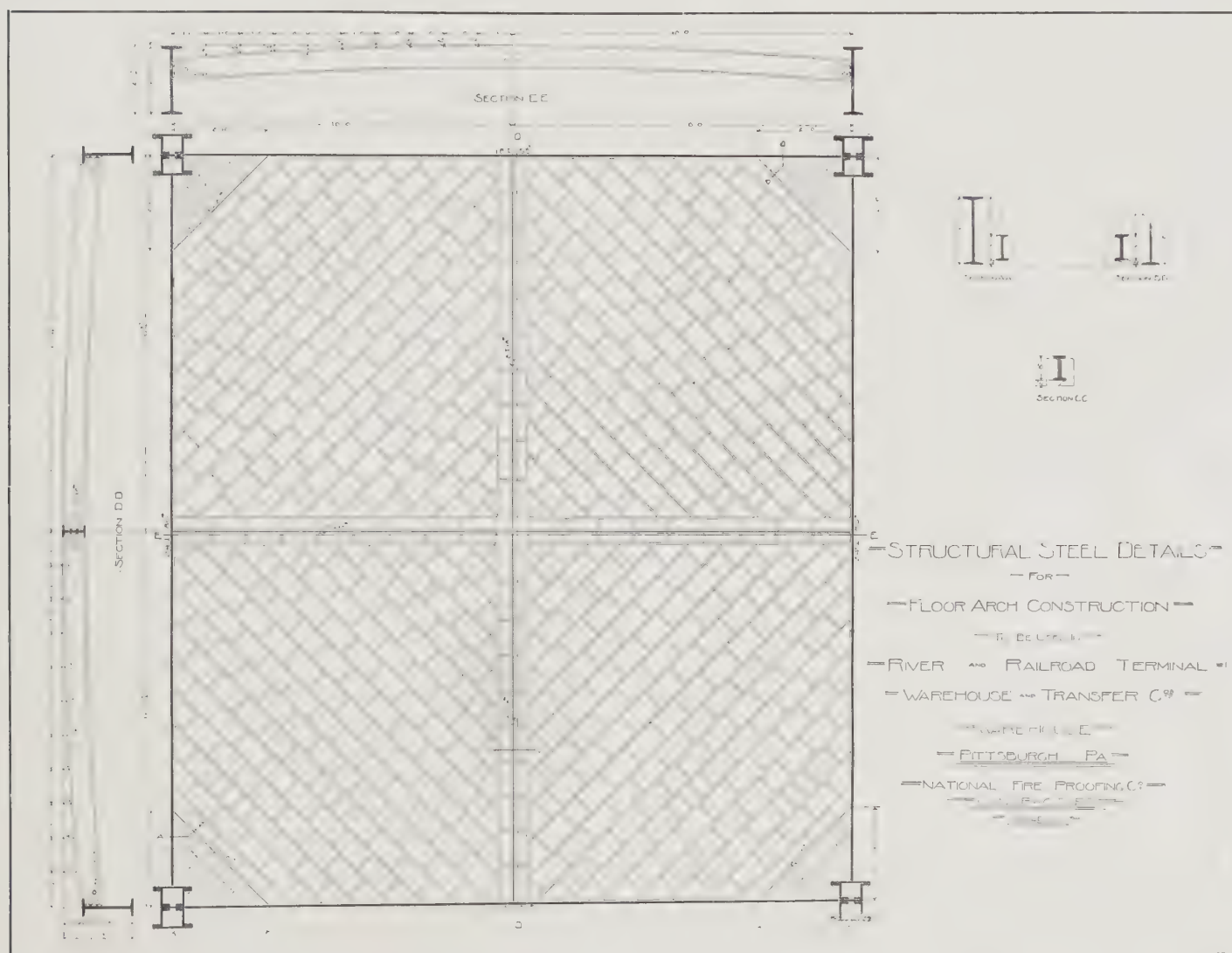
The concrete fill was mixed in the proportion of one

electric pyrometer couples suspended through the floor from above and hanging about six inches below the ceiling. One couple was near the crown of the arch, and the other in a corner, distant about three feet from each wall.

Readings were made upon each couple every three minutes. The fuel used was dry refuse wood, the frequency of firing being determined by the temperature of the test chamber. The "Log of Temperature Readings," together with plotted curve for one couple, is given herewith.*

DEFLECTIONS.

The deflections which occurred at various stages of the test were measured by a Y-level reading upon a rod



Vulcanite Portland cement, three river sand and six gravel. The tile ceiling was given a coating of one inch of cement.

PURPOSE OF THE TEST.

The purpose of the test was to determine the effect of a continuous fire below the floor for four hours at an average temperature of 1,700 degrees Fahr., the floor carrying at the same time a distributed load of 270 pounds per square foot, at the end of the four hours, the under side of the floor (or ceiling), while still red hot, to be subjected to a one and one-eighth inch stream of cold water at short range under 60 pounds' pressure for ten minutes, deflection of floor to be measured continuously during the test.

TEMPERATURES.

The temperatures of the fire were obtained by two

located upon the middle of the floor slab. The deflections were read by Mr. Bailey, an engineer detailed from the Pittsburgh Testing Laboratory.

REPORT PITTSBURGH TESTING LABORATORY, LIMITED.

PITTSBURGH, PA., December 7, 1904.

Record of arch deflection under action of fire and water.

Test conducted December 7, 1904, at the National Fireproofing Company, Plant No. 1, Pittsburgh, Pa.

The table gives full details of the variations in level throughout the test.

*An exact record of temperatures was taken every three minutes. After the test was fairly under way the temperatures varied from 1,000 to nearly 2,200 degrees. The average from 11.15 A. M. to 3.15 P. M. was 1,725.4 degrees for one couple, and 1,642.2 degrees for the other, showing a very even distribution of heat throughout the chamber. The complete record is omitted here for lack of space.—EDS.

TIME. A. M.	DEFLECTION. FEET.	TIME. A. M.	DEFLECTION. FEET.
11.03	.0	1.48	0.01
11.18	0.01	2.03	0.01
11.33	0.02	2.18	0.01
11.48	0.03	2.33	0.01
P. M.		2.48	0.01
12.03	0.04	3.03	0.015
12.18	0.04	3.18	0.015 quenched.
12.33	0.03	3.28	0.02
12.48	0.03	3.38	0.03
1.03	0.03	3.43	0.035
1.18	0.02	3.48	0.04
1.33	0.02		

Maximum drop of arch 0.04 feet.

WATER.

The water was applied by city firemen with a steamer detailed for the purpose from the Pittsburg Fire Department. Owing to the location of the hydrant, it was necessary to use 500 feet of three-inch hose, but the engineer reported that he maintained a pressure on his gauge varying from 100 to 120 pounds per square inch during application of the water, and this was augmented by a fall of 40 to 50 feet between the engine and the test house; so although a long line of hose was used, it is safe to say that the nozzle pressure was well above 60 pounds. The firemen estimated it at 75 to 80 pounds.

In applying the water the stream was thrown back and forth over the whole ceiling as much as possible, and not allowed to strike continuously in one place. As it was not practicable to flood the roof, as is customary in tests of this character, the stream was played on the ceiling continuously for ten minutes at full pressure.

RESULTS OF THE TEST.

Owing to the very large size of the test chamber and an insufficient flue area for the volume of fire, together with the fact that the fuel supply in the early part of the test was not suitable to feed a fire of such magnitude, it was impossible to get high temperatures during the first half of the test.

The quality of the fuel was changed during the latter part of the test, and the building having become thoroughly heated it became easy to maintain high temperatures.

Because the temperatures in the early part of the test were low, which resulted in lowering the average, it was decided to ignore the first fifteen minutes of the test, and make it up by extending the time fifteen minutes over the four hours. The temperatures during the first fifteen minutes are given in the "Temperature Log," but they were not used in calculating the averages.

The cement coating on the ceiling began to blow off about ten minutes after the fire started, and a considerable portion of it fell before the expiration of the test. The roof was covered with a load of hollow tile several feet deep, making it impossible to ascertain whether any cracks developed there or not. As the roof was in compression in all parts, and the deflections recorded were very small, it is not likely that cracks did occur there.

After application of the water it was found that the cement coating was gone, and the tile exposed where the water struck the ceiling, but the tile appeared to be in

perfect condition, with no cracks or broken parts. At least none were apparent under a hasty inspection by torch immediately after the test.

The maximum deflection recorded during the test was a trifle under one-half inch, and the average temperature at the middle of the ceiling was 1,725 degrees Fahr.

The illustrations show the building during all periods of the test, and indicate the condition of the test floor and building after the test. An illustration is also shown of a duplicate test building in process of demolition. It gives a good idea of the arrangement of the eight-inch cambered beams and the construction in general.

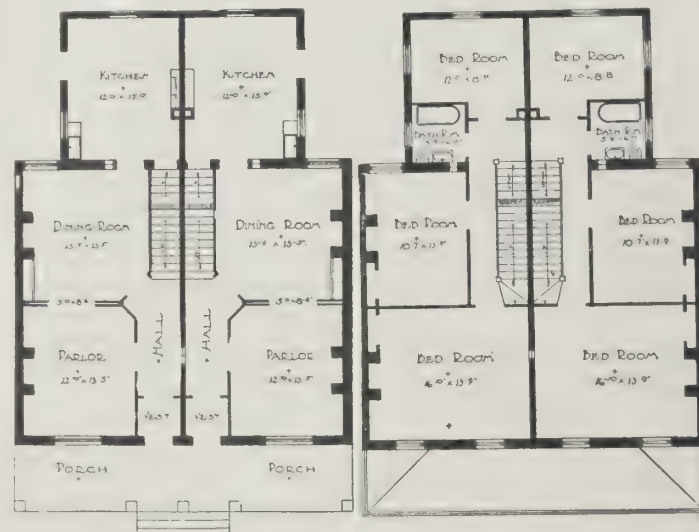
The company informed me that the floor was subsequently loaded up to 1,000 pounds per square foot with a maximum deflection of one and one-half inches.

Respectfully submitted,

(Signed) IRA H. WOOLSON.

Two Interesting Examples of Fireproof Construction.

THE construction of moderate cost dwellings and apartment houses built entirely of fireproof material, while still in the experimental state, has recently been developed in two notable instances. We illustrate in this number one of three double houses, lately built in Pittsburg for the president of the National Fireproofing Company. All of the constructive materials employed were burned clay products, and most of the material was of hollow tile, such as is commonly used for wall and floor construction. The



FLOOR PLANS.

materials have been employed with a great deal of ingenuity and effectiveness from a structural standpoint, and the houses were designed so economically that, while the cost is a trifle more than for ordinary construction, the expense of maintenance is reduced very materially, and it is not believed necessary to carry fire insurance on the structures. On the exteriors the houses present the appearance of being built in the ordinary manner, of brick. As will be seen by the illustrations, however, the outside walls consist only of a single layer of face brick backed up with common hollow brick. The foundations are formed with conduit tiles, 9 x 13 x 36 inch, forming a 13-inch wall. The partitions

are of 6-inch hollow tile, and these are constructive walls which support the floors and the roof. All of the floors are of hollow tile of the Johnson system of long span



FOUNDATION.

arches, the maximum span being about 17 feet. These floors are reinforced with steel network, but no steel beams whatever are used in the construction, and the floors are practically monolithic, the hollow tiles being laid in straight courses in cement. The porch construction is similar to the floors, and is finished with a granolithic surface. The roof is of Spanish tiles, the gutters and conductors being of copper.

The interior finish is simple but durable in character, and the houses are well equipped in plumbing, hot water, etc. The finish, of course, is of wood. The



FURRING OF HOLLOW BRICK.

upper floors are of slate. The contract price, complete, for each house was \$4,600. This is an increase over ordinary construction of only about \$500, as was shown by actual bids received; but in view of the fireproof qualities the houses are well worth the difference, and they rent so readily for \$45 a month that it is the owner's intention to construct twelve more of the same character. We do not present these as samples of architectural design, but as evidence of what can be accomplished by an intelligent use of burned clay products. They demonstrate amply what we have always claimed, that ten per cent additional cost will for simple work give a thoroughly fireproof house in place of the ordinary inflammable cellular construction. As far as relates to design, a good design costs no more in fireproof material than in ordinary cheap construction. It should be borne

in mind that in the case of these houses the manufacturer of the burned clay products is himself the investor, and they offer a most valuable illustration of what those who are most familiar with burned clay products can accomplish in this direction.

Another and somewhat more ambitious construction in the same line has been called to our attention and is illustrated herewith. The Campania Apartment Building has been erected at Akron, Ohio, from the design of Bunts & Bliss, architects, for the Akron Fireproof Construction Company, who are the owners and tile manufacturers. This is quite a good sized building, as will be seen by the illustration, and is constructed entirely, within and without, of burned clay material and almost entirely of cull tile which the Construction Company had on hand. The outside and center walls are built up partly in three thicknesses of 4 x 12 x 12 inch tile and partly of two



PARTITIONS OF HOLLOW TILE.

thicknesses of 6 x 6 x 12 inch partition tile, the outside being veneered with alternate courses of paving blocks and standard paving bricks, the different sizes being used so as to bond with the six-inch tile courses of the side walls. All these tiles are laid in Portland cement. The webs run vertically and the outside facing tiles, which are 4 x 6 x 12 inch, have smooth exterior surfaces, while the balance have the usual scratch surface of partition tiles.



THE FLOORS.

The cornices, sills, lintels and belt courses are all of tile moldings made in presses in the same manner as floor and partition tiles are made. All the partitions are of four-inch hollow tile, with a single tile five feet long

for each tread. Even the tank on the roof is constructed of tiles reinforced with steel bands and plastered on the inside with Portland cement. In actual construction all the walls and partitions were carried up simultaneously, and when a floor level was reached the flooring — which is on the Johnson system with six-inch tiles spanning 17 feet 3 inches — was laid at once over the whole area before the next story walls and partitions were started, thus affording a perfectly uniform floor surface, tying the walls and floors thoroughly together. Wooden floorings were omitted entirely. A composition of plaster and sawdust or wood pulp was floated true over the tile blocks and a wooden strip carried around the edges of the rooms for nailing carpet.



THE CAMPANIA APARTMENT, AKRON, OHIO.
Bunts & Bliss, Architects.

The exterior of the building has been treated in a very dignified manner, which agrees admirably with the character of the material and, as far as we can judge without knowing the color effect, presents a very satisfactory appearance. The building contains twenty-one suites, was completed in about nine months from the time it was started, and cost only about \$45,000, which is a very moderate price for a structure of these dimensions.

In illustrating these two examples of fireproof houses we wish to emphasize the fact that they are distinct marks of progress. We will not evolve at one bound a complete system of construction and exterior treatment in burned clay products upon which no improvements can be made. But the fact that each of these instances represents buildings which are thoroughly fireproof in all their details and at the same time are eminently successful from the investment standpoint, while offering abundant opportunity for satisfactory architectural treatment, shows conclusively that fireproof dwellings are not a fancy of a manufacturer or a theorist, and that there is no valid financial, æsthetic or constructive reason why our dwellings and hotels of even the most humble nature should not be constructed in the same manner as these buildings.

Editorial Comment and Selected Miscellany

SHOULD THE ELEMENT OF BEAUTY BE NEGLECTED IN OUR SUBWAYS?

AT the time of the construction of the Boston Subway, the first of its type in this country, all who were interested in a proper solution of the problem urged, but without avail, that the element of beauty should be

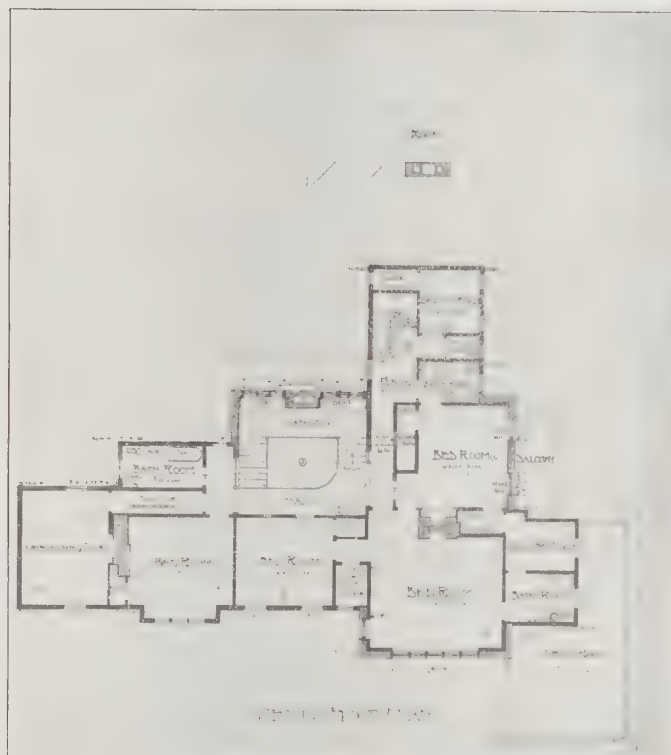
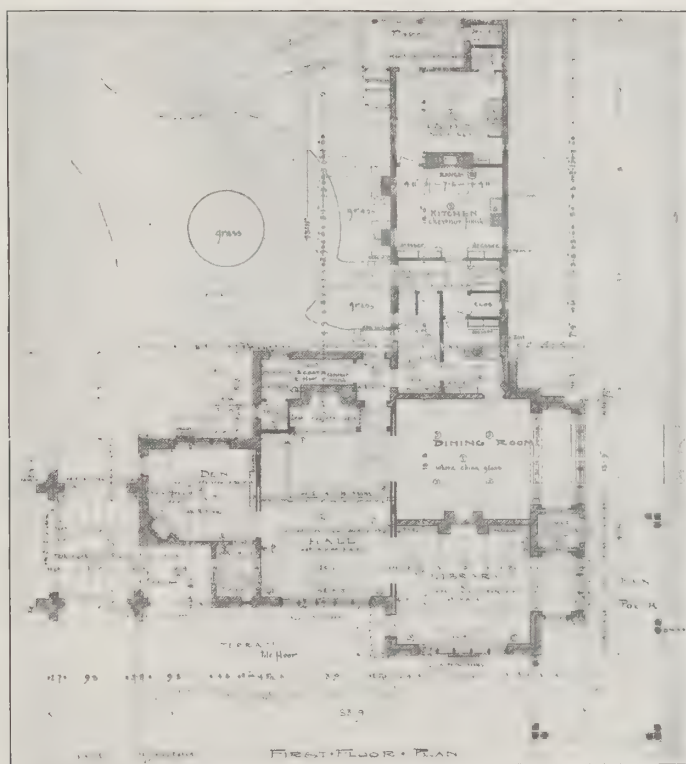


SQUASH COURT FOR HOUSE AT MT. KISCO, N. Y.
Morgan, Howard & Waid, Architects.

thoroughly considered. It has been the fortune of the New York Subway to profit by experience elsewhere and make a deliberate and quite acceptable attempt to rationally adorn the interior. We hope that all future constructions of this sort will be distinct improvements upon what has gone before, but it will not do for those who are interested in municipal



APARTMENT, NEW YORK CITY.
Neville & Bagge, Architects.
Terra-Cotta furnished by New York Architectural Terra-Cotta Co.



DINING ROOM AND LIBRARY FROM THE HALL.



THE STAIR HALL.

HOUSE FOR A. B. ROBERTS, ESQ., BALA, PA.
Baker & Dallett, Architects.

art to take this for granted. Among the earliest examples of any form of subway construction was the so-called two-penny tube in London, which was constructed without the slightest regard for anything except to push the trains through at the greatest speed at the least expense. The stations were hopelessly homely and dismally unattractive, and we have no doubt that subway construction was held back for at least ten years because of the thoroughly uninviting appearance of this first underground railroad. New York at present undoubtedly leads the world in the character of its subway, and yet they have made only a beginning in the metropolis; and if half the schemes which are proposed are carried out there will be a tremendous change in the appearance of the city and in the means of communication. But if this improvement is going to be thoroughly welcomed by the people the subway constructions must be neat, clean, wholesome, sanitary and, last but by no means least, beautiful. The initial cost of the added element of beauty ought never to be considered. The people will tire and sicken of long tubes of grimy soot and accumulated filth just as they did and have in London. For that matter, the way having been once shown so well, it will be pretty hard for a company now to undertake to omit good looks from the assets of an underground railroad. The people would be quite as prompt to demand it as they have been to order the removal of advertising features, and it is so much cheaper to build right from the start than it is to attempt a veneer of good looks on a hopeless construction that in the long run, considering that the future subways will be obliged to consider art, it is cheaper to put it in at the first.

Subway constructions offer what is practically a new field for the architect. We do not feel that the problem is by any means solved even in New York. The stations, excellent as they are, could certainly be improved upon by the very architects whose skill made them what they are. And we believe the numerous subways, which are undoubtedly to be constructed in all of our large cities within the next ten or fifteen years, will in time develop a thoroughly rational, consistent and beautiful treatment, which will be in many respects unique, and will offer a remarkable opportunity for the exercise of architectural ability. There is every indication that the adornment of our subways

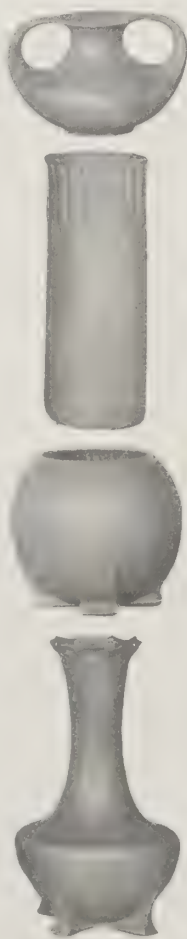


STABLE OF HOUSE AT CANTON, ILL.
Robert C. Spencer, Jr., Architect.

satisfied by faience, enameled terra-cotta tile and brick, in addition to which is the element of permanent color which can really be supplied by no other known material. We look therefore to see a very successful use made of these large opportunities. Chicago at present has the most comprehensive system of subways in the country, but these subways are entirely for freight, and the passenger subway has not yet made its appearance. It is bound to come, just as it is bound to be demanded in the congested portions of every large city. When the subway was first proposed for Boston it was urged against it that to take the cars off of the street would ruin business. As a matter of fact it has been found to be just the other way, and not only has business increased where tracks have disappeared, but property has increased enormously in value when relieved from the oppression of the noisy cars. The elevated railroads in every case have depreciated property along their lines. The exact opposite result has followed the introduction of the subway, and though the latter may cost four or five times as much as the former, in the course of years it is really cheaper.

THE ENORMOUS WASTE BY FIRE.

THE waste of property by fire throughout the United States has increased far more rapidly than our knowledge of how to prevent it. The time of marked increase has coincided pretty closely with the development of our fire resistive construction, and it is a seeming anomaly that the more fireproof buildings are built in this country, the more care we take in devising the best construction, the greater is our annual fire bill. The loss now averages \$150,000,000 per year, having more than doubled since the era of steel frame building construction began in 1883. A country less wealthy than our own would have been bankrupt long ago with such a perpetual throwing away of property. And it is hard to



TECO VASES.
Made by the
Gates Potteries.



THE AGNES MEMORIAL SANATORIUM, DENVER, COLORADO.
Roofed with Ludowici Interlocking Red Spanish Tile. Gove and Walsh, Architects.

altogether explain either why such conditions exist at all, or still more why they should be allowed to persist. Merchants and manufacturers are obliged to carry fire insurance in order to protect their credit, and under the present conditions the cost of insurance is a heavy and a discouraging tax on industrial enterprises, while because of the constant outgo the earnings of insurance companies are very small. The net profits of all of the companies in the United States during the preceding ten years were swept away by the conflagrations of 1904. We will very soon be confronted with the necessity of either reducing our fire losses or insuring our buildings ourselves, for the companies cannot long continue in business under such conditions.

And the worst of it is that in no cities are there any signs that the conditions are improving. A year ago the wise ones looked pityingly at Baltimore and declared that for its structural sins it had been visited by such a fire, but the same results could happen in any one of twenty or thirty large cities of this country. As the wealth of our country has increased, the merchants, the shops, the warehouses have increased their stores more than correspondingly, so that when a fire is once started

the loss may run up into the millions in a few minutes. Million-dollar fires are no longer infrequent. The burning of a single block may consume the combined premium receipts of all the local fire insurance companies for several years; and such a district as exists on each side of lower Broadway demands more fire insurance capital than the world can supply.

The New York *Sun*, in discussing this, raises the very pertinent question whether a city of the size of New York would not find it economical to prohibit the further erection of combustible buildings. Unfortunately our legislators still cling to the idea that height is a measure of fire risk, and even our most stringent laws permit a man to build a fire trap and store it full of expensive goods, provided only he does not carry it more than seventy or eighty feet high. This is wrong in principle and mischievous in fact. So long as we permit inflammable areas to surround our fireproof buildings we must expect disastrous conflagrations, and until the right of the whole demands that in the business districts of a large city nothing but fireproof construction shall be allowed we will continue to throw our profits into the fire, an annual tribute to our lavish ways of building.



HOUSE FOR LOUIS BEEZER, ESQ., PITTSBURG, PA.
Beezer Brothers, Architects.



INTERIOR COURT, RAILWAY EXCHANGE BUILDING, CHICAGO, ILL.

D. H. Burnham & Co., Architects.

Finished entirely in Glazed Terra-Cotta made by
Northwestern Terra-Cotta Co.

MR. R. GUASTAVINO, to whom the architectural profession owes so many original conceptions in regard to fireproof construction, has just issued the second portion of his treatise on the "Function of Masonry in Modern Construction." The idea of the work is primarily to impart to beginners in architecture the fundamental principles of properly utilizing masonry to protect perishable materials. The author has given his name to a species of construction which has met with a great deal of favor in this country, a construction which is as old as the use of cement, which was thoroughly known to the Romans, was used with great success in Spain up to the days of the late Renaissance, but which came to this country as a revival and as the thought of one man. The Guastavino construction is for many purposes extremely well adapted. It has been used with great success in

the New York Subway, and in some of our public buildings it has had a most able and efficient interpretation. It is interesting to read this book in the light of all the writer has practically accomplished. Theory never is exactly in accord with practice, and the enthusiasm which kept alive the author's energies through the earlier years before his construction was

DETAIL FOR SACRED HEART CHURCH,
BRADDOCK, PA.Made by Atlantic Terra-Cotta Co.
John T. Comes, Architect.

received as a success is manifest in the pages of this brochure; but with it all is a quantity of useful, practical information on the subject, which could have been acquired only with the help of the hard lessons of necessity.

DETAIL EXECUTED BY THE INDIAN-
APOLIS TERRA-COTTA CO.

THE AGNES MEMORIAL SANATORIUM.

THE Agnes Memorial Sanatorium was founded and endowed by Mr. Lawrence C. Phipps of Pittsburg and Denver in memory of his mother.

The object of the institution is the care and cure of patients afflicted with tuberculosis in its incipient forms.

The present buildings, being five in number, are arranged as follows: Administration building, medical building, two pavilions (one for women and one for men) and power plant, the latter large enough to accommodate



CARNEGIE LIBRARY, WABASH, IND.

Wing & Mahurin, Architects.

Covered with American "S" Roofing Tile.

double the present demands, and the building so arranged as to increase the present power one-third.

The buildings are erected on the highest eminence east of Denver and five miles from the business center of the city. The grounds of the sanatorium consist of one hundred and sixty acres.

The buildings are built of brick cemented on the exterior with Ideal (Colorado Portland) cement left in its natural color, a warm gray, and roofed with Ludowici red Spanish tiles.

The interiors of the medical building and pavilions are finished with as little woodwork as possible. No trim whatever is used; all corners and angles are rounded; patent plaster was used and all walls and ceilings painted. The floors are narrow quartered southern pine varnished, and finished against the walls with a concave shoe.

All lavatories are tile and marble.

All partitions between sleeping rooms are sound-proof.

The buildings are heated by steam operated by the Paul Automatic Vacuum System. Direct indirect radiators are used.

NEW BOOKS.

STRUCTURAL DESIGNERS' HANDBOOK. By W. F. Scott. New York: Engineering News Publishing Company.

This handbook, essentially a diagrammatic treatise on the subject of structural design, contains also a full tabulation of the properties of market shapes of materials.

It is presented to the architectural and engineering professions with the thought that it may be the means of shortening and possibly eliminating much of the computation and drudgery which are necessary accompaniments of structural designing.

The diagrams presented are time-saving devices, useful and suggestive to the non-expert and the student, since the diagrams illustrate graphically the relations of the various factors of proportion, span loading, etc., for the variable conditions of ordinary practice.

Throughout the work the New York Building Code has been followed, because it is everywhere recognized as conservative and safe.



PANEL OVER THE ENTRANCE TO FACTORY OF VICTOR TALKING MACHINE CO., CAMDEN, N. J.
Ballinger & Perot, Architects.
Made by Excelsior Terra-Cotta Co.

AMERICAN ESTATES AND GARDENS. By Barr Ferree. 340 pages. Cloth bound. Size, 10½ x 13½ inches. 275 illustrations. Price, \$10.00 net. New York: Munn & Co.

The building of the great homes of America has necessarily involved the development of their surrounding grounds and gardens; the work of the landscape gardener has rivaled, in its dignity and spacious beauty, that of the architect. If but little is known of our great estates, still less is known of their gardens, of which, in spite of the comparatively short period that has been given for their growth, we have some very noble instances among us.

"American Estates and Gardens" is a sumptuously illustrated volume in which the subject of the more notable great estates, houses and gardens in America receives adequate treatment. An effort has been made to select as great a variety as possible of the styles of architecture which have been introduced into this country, as being specially adapted to the peculiar conditions of American country life.

Although the exteriors of some of the houses shown in this work may be familiar to a certain number of readers, few have had the privilege of a visit to their interiors, and for that reason special attention has been given to reproductions of many of the sumptuous halls and rooms of people of wealth, and no better way can be obtained of learning how the favored few live.

IN GENERAL.

The Brooklyn Chapter of the American Institute of Architects will hold its fifth annual exhibition at the Pouch Gallery, Clinton Ave., Brooklyn, April 7 to 22. Exhibits of drawing, photographs, sculpture and objects of industrial art are desired from all interested. Detailed information will be sent to intending exhibitors on application to W. A. Parfitt, secretary of the Exhibition Committee, 26 Court Street, Brooklyn.

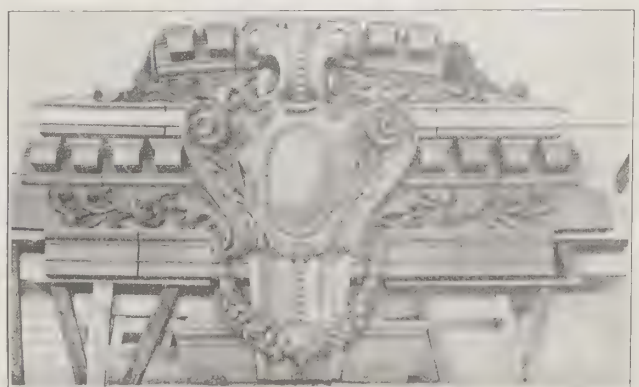


PANEL BY GEORGE B. POST, ARCHITECT.
Perth Amboy Terra-Cotta Co., Makers.

Clinton M. Hill (formerly Bacon & Hill) and Thomas M. James, architects, have formed a copartnership under the firm name of Hill & James. Offices, 35 Congress Street, Boston.

Edgar O. Hunter and P. C. Rubush have formed a copartnership for the practice of architecture. Offices, Fitzgerald Building, Indianapolis, Ind.

Frederick A. Jaerschky, architect (formerly of Jersey City, N. J.), has removed to Binghamton, N. Y. Offices in the Binghamton Press Building. Catalogues and samples desired.



DETAIL EXECUTED BY GLADDING, McBEAN & CO.

Walk C. Jones and M. H. Furbringer have formed a copartnership for the practice of architecture. Offices, Scimitar Building, Memphis, Tenn.

George R. Morris and Frank E. Clifford have formed a copartnership for the practice of architecture. Offices, 657 Calvert Building, Baltimore, Md. Samples and catalogues desired.

Copeland & Dole, architects, whose offices were recently destroyed by fire, have moved to the Royal Building, Fulton and William streets, New York City. Catalogues and samples desired.

Herbert Matthews, architect, Merchants' Bank Building, Winnipeg, Manitoba, Canada, would be glad to receive manufacturers' catalogues and samples.

F. G. Brown, architect (formerly of Danville, Ill.), has removed to Los Angeles, Cal., and formed a co-partnership with J. W. Krause under the firm name of Krause & Brown, Stimpson Building. Catalogues and samples desired.

The new Deering Building, F. B. and L. L. Long, architects, which is to be built in Minneapolis, will have, as a finish for its exterior, glazed terra-cotta and enameled bricks. About eighty thousand cream color, satin finish, stretcher bricks will be used, in addition to twenty thousand special made bricks for corners and jambs. They will be supplied by the Tiffany Enameled Brick

Company, whose product seems to find a special favor for the fronts of buildings. It is claimed by the manufacturers that their bricks, used in combination with glazed terra-cotta, cost but little more than the best quality of pressed bricks. The Tiffany Company will also furnish their material for the new National Bank Building at Charleston, W. Va., also for a large store building at Des Moines, Iowa, C. C. Cross & Sons, architects.

WANTED — A FIRST-CLASS DRAUGHTSMAN. One competent to make perspectives. Send samples of work, state experience and salary expected. R. H. Hunt, Chattanooga, Tenn.

WANTED — A THOROUGHLY COMPETENT DRAUGHTSMAN. One experienced in church and school work. Must be able to lay out scale and detail drawings from preliminary sketches. Give age, training, references and salary expected. Ernest & Hauselmann, House Building, Pittsburg, Pa.

WANTED — A FIRST-CLASS ARCHITECTURAL DRAUGHTSMAN. Apply at once, giving full particulars, to Shand & La Faye, Columbia, S. C.

.. Competition for a Fireproof House ..

Constructed of Terra-Cotta Hollow Tile Blocks To cost \$10,000

First Prize, \$500

Second Prize, \$200

Third Prize, \$100

PROGRAMME



THE possibilities in the use of burnt clay in its various forms in our domestic architecture have only begun to be realized.

That dwellings of moderate cost should be made fireproof is not only recognized as desirable, but practicable.

The object of this competition is to call out designs for a house, the walls, floors and partitions of which are to be of terra-cotta hollow tile blocks

The cost of the house, exclusive of the land, is not to exceed \$10,000. Designs calling for a more expensive house will not be considered. A detailed statement of costs must accompany each design. This statement is to be typewritten on one side only of a sheet of paper measuring 11 inches x 8 1/2 inches.

A further object of this competition is to encourage a study of the use of burnt clay products of the particular class mentioned, in an artistic as well as practical manner, and to obtain designs which would be appropriate for such materials.

In the selection of blocks for exterior walls, terra-cotta hollow tile fireproofing blocks must be employed, and not architectural terra-cotta blocks.

REQUIREMENTS: The house is supposed to be built in the suburbs of a large city, upon a corner lot, with a frontage of 100 feet towards the south and 150 feet on the side street towards the east. The grade is practically level throughout. The house is to be two stories high with an attic. This attic may be either in the pitch of the roof or a third story may be treated as an attic with a flat roof. On the first floor there is to be a reception room, a library, a dining room, a kitchen and the ordinary allowance for pantries, coat rooms, stairways, etc. The front hall may be treated as desired. In the second story there are to be two bathrooms, four chambers, a sewing room, a den, linen closet, etc. The third story should contain at least two servants' rooms, besides a storeroom. Fireplaces, bay windows, seats, etc., are at the option of the designer.

The clear height is to be in first story 10 feet, second story 9 feet, third story optional with the designer. The cellar need not be specially planned, but will have a clear height of 8 feet. Arrangement of piazzas to be left with the designer.

CONSTRUCTION: While the method of construction for walls, floors and partitions is to be determined by the designer, the following suggestions are offered as being practicable and admissible:

First. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the treatment of the faces of the blocks to be appropriate for such materials.

Second. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the face of the wall to be rough cast or plastered.

Third. The outside walls may be faced with brick, with a backing of 8-inch hollow tile blocks.

Fourth. The outside wall may be built with an outer and inner wall, with an air space of 4 inches between, using in each wall a 4-inch hollow tile. The treatment of the face of such a wall, and the manner of bonding the outer and inner walls, are left to the designer. The plaster finish may be applied direct to the interior surface of such a wall.

If hollow tile blocks are used for facings, any special features in the finish or treatment of their exposed surfaces should be given in a footnote on sheet showing elevations.

For the interior partitions terra-cotta blocks are to be used.

For the floors one of the long span, terra-cotta hollow tile block systems now on the market, which are adapted up to spans of 20 feet without the use of steel beams, or a system which employs terra-cotta hollow tile blocks in connection with light steel construction.

DRAWINGS REQUIRED: On one sheet the front and a side elevation, at a scale of four feet to the inch; also plans of first and second floor, at a scale of eight feet to the inch, and on another sheet details showing clearly the scheme of construction for the exterior walls, the floors and the partitions, together with other details drawn at a scale sufficiently large to show them clearly. Graphic scales to be on all drawings.

The size of each sheet is to be exactly 24 inches by 36 inches. The sheets are not to be mounted.

All drawings are to be made in black line without wash or color. All sections shown are to be crosshatched in such manner as to clearly indicate the material, and the floor plans are to be blocked in solid.

Each set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., on or before May 15, 1905.

The designs will be judged by well-known members of the architectural profession.

In making the award the jury will take into account, first, the fitness of the design in an artistic sense to the materials employed; second, the adaptability of the design as shown by details to the practical constructive requirements of burnt clay; third, the relative excellence of the design.

Carefully made estimates giving relative costs of fireproof and ordinary wood construction for houses built from the designs awarded the three cash prizes will be obtained by the publishers of THE BRICKBUILDER, and given at the time the designs are published.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned, except the prize drawings, may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

For the design placed first in this competition there will be given a prize of \$500.00.

For the design placed second a prize of \$200.00.

For the design placed third a prize of \$100.00.

In the study of this problem, competitors are invited to consult freely with the manufacturers of burnt clay fireproofing or their agents. This competition is open to every one.

THE BRICKBUILDER.

VOL. 14

MARCH 1905

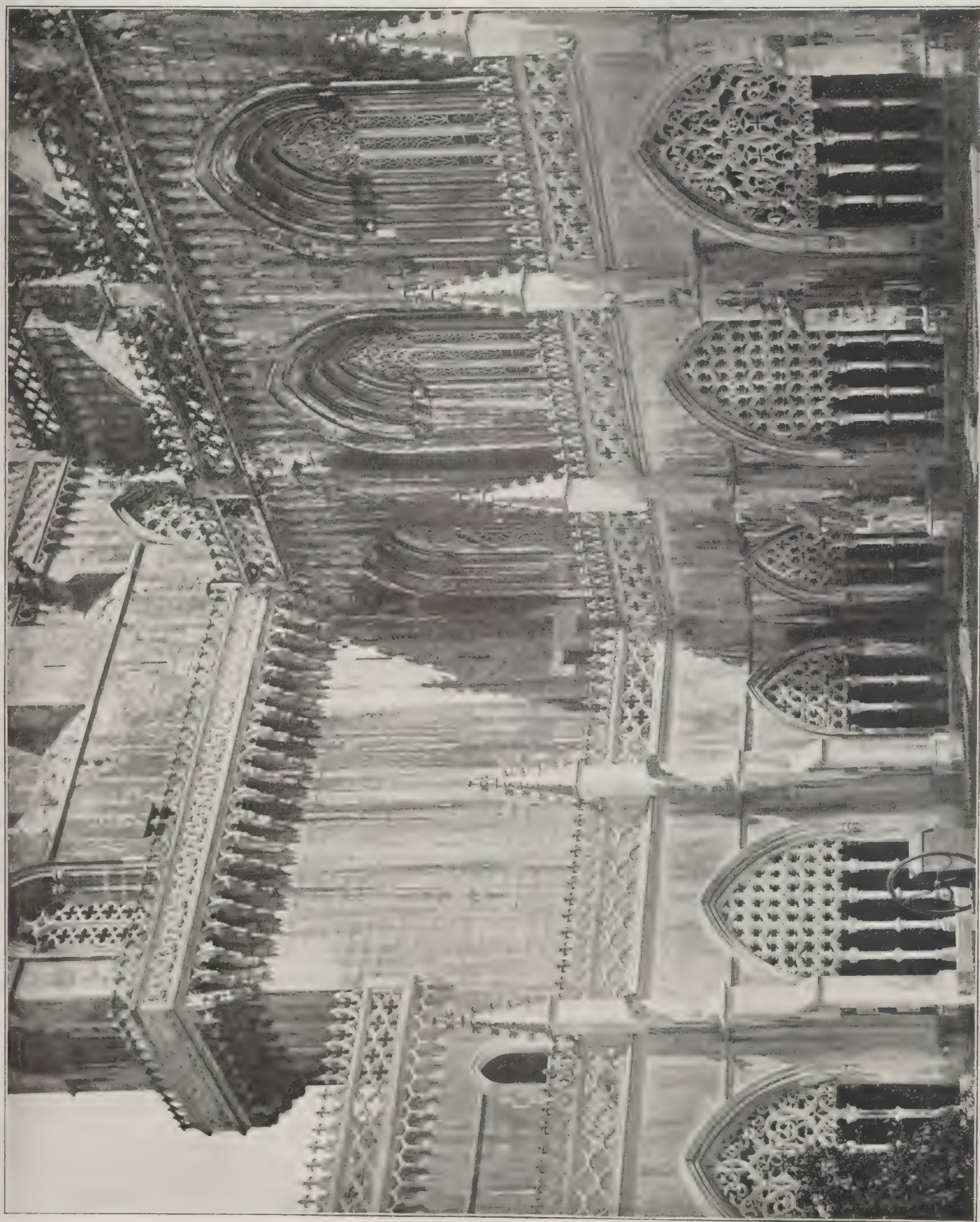
No. 3

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FROM WORK OF GROSVENOR ATTERBURY, BARNEY & CHAPMAN, CRAM,
GOODHUE & FERGUSON, PRICE & DE SIBOUR AND POPE,
HORACE TRUMBAUER.

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CLOISTER, CHURCH OF NUESTRA SENHORA DA VITORIA, BATALHA, PORTUGAL.



THE BRICKBUILDER

VOL. 14 No. 3

DEVOTED TO THE INTERESTS OF
ARCHITECTURE IN MATERIALS OF CLAY

MARCH 1905

THE BRICKBUILDER.

PUBLISHED MONTHLY BY

ROGERS & MANSON,

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the American News Company and its branches.

ADVERTISING.

Advertisers are classified and arranged in the following order:—

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Advertisements will be printed on cover pages only.

WASHINGTON ADVISORY ARCHITECTURAL BOARD.

WHEN Speaker Cannon appeared as a guest at the banquet of the American Institute of Architects at Washington it was cause for good-humored wondering at what could have induced a man who has been so outspoken in his condemnation of things architectural to accept such hospitalities. It was even suggested that it was a shrewd attempt to prove to the Speaker that the architects were not altogether as bad as they were sometimes painted, and his interesting address showed that to a certain extent he was on the defensive. He certainly has far more need to defend his position now in the face of opposition shown toward President Roosevelt, who in carrying out his avowed intent of assuring as far as possible the logical and artistic development of the capital has appointed a consultive board consisting of Bernard K. Green, D. H. Burnham, Charles F. McKim, Frederick Law Olmsted and Augustus Saint Gaudens, whose approval must be secured before any public building can be located in Washington, unless the location is arbitrarily placed by act of Congress. Excepting Mr. Green, who was the superintendent during the construction of the Congressional Library and is now supervising the Agricultural Building, these gentlemen constituted the com-

mission which prepared the admirable report on the improvement of Washington. It is announced that Speaker Cannon and his friends are determined to prevent the President from availing himself of the services of such a board, and they are even questioning his right to create such a body without special authorization from Congress. The Speaker is announced as being specially incensed against the members of the original commission, whom he has been opposing for a long time and in which opposition he apparently is supported by a strong local following of real estate speculators, who do not relish the plan of leaving the location of public buildings in the hands of men who will not bend to influences. This is a case where there is every reason to believe that the President is right and Speaker Cannon is entirely wrong.

The Speaker is an admirable watchdog for the treasury, and has rendered the country good service by defeating much improper legislation, but he is by no means a person to be intrusted with decision of matters of art, and he certainly has shown a total lack of sympathy with any attempt to make Washington all it might and ought to be by reason of its site, its general plan and its possibilities. It could be made the most beautiful city in the world, and undoubtedly, if the work of constructing public buildings is carried out upon the plan which has been so earnestly, patiently and understandingly elaborated by the Washington Improvement Commission, this greatly desired result would be at least approximately secured. That Speaker Cannon should be allowed purposely to block the entire plan of development or so disturb it as to make its final accomplishment wellnigh impossible ought not to be tolerated. The improvements of our national capital should be carried on only under the advice of the ablest experts the nation possesses, and no politician with a tenure of office of but a few years should be allowed to interfere with improvements which are to last for centuries.

ROTCH TRAVELING SCHOLARSHIP.

WE are asked to announce that the examinations for the Rotch Traveling Scholarship this year will be held beginning Monday, April 10. This is the most coveted prize within the reach of the younger members of the profession and will undoubtedly be struggled for this year quite as vigorously as it has been in the past. It is certainly worthy of the best efforts of any young man who desires to succeed. Full particulars can be obtained by addressing the Secretary, C. H. Blackall, 20 Beacon Street, Boston.

Ecclesiastical Architecture.

BY R. CLIPSTON STURGIS.

IT is very seldom that the men of one profession who are called upon to do work for men in another profession have such an opportunity of exchanging views as has been offered here by the editor of THE BRICKBUILDER. It should be mutually helpful to architects and clergymen to know what each thinks should be the architectural expression of the Church.

To discuss intelligently such a problem, one must, however, have a clear idea of just what is meant by the Church; for the word means essentially different things to different bodies, and even to different people who profess the same faith. At the risk of appearing to encroach on the privileges of the clergy, I must explain at the outset what my understanding is of the meaning of the word "Church"; only thus can I attempt to make clear the principles which I believe should govern the architectural expression of the Church.



KING'S CHAPEL, BOSTON, MASS.

The Church is primarily then an historic body with tradition, custom, ritual, all expressing the accumulated spiritual experience of many centuries. Viewed in this way it is impersonal, authoritative, final. It is also a "lively faith" — in the language of our forefathers — and that which is alive must grow, must change. This change is due not merely to environment and the character of the times, but also to special gifts, to special individuals, who are able to put old truths in a fuller and more perfect way, or even at times to add new spiritual truths to the body of the faith. Viewed in this way it is the force of the individual rather than the authority of the past which is preëminent.

At times in the history of the Church now one now another of these views has been emphasized, sometimes over-emphasized to the exclusion and temporary obscuration of the other side.

Up to the Reformation these two existed side by side in a Church which, however divided, was yet one. Since the Reformation the Church has been divided, roughly

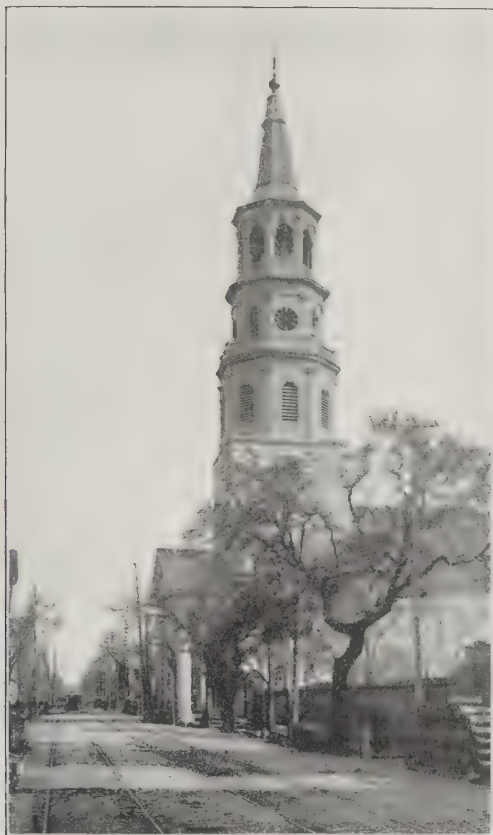
INTERIOR, KING'S CHAPEL, BOSTON.
Looking West.

speaking, between those who lay most stress upon the historic tradition of the Church and those who lay most stress upon the individual expression of the present. In brief it is the altar and the pulpit.

Before attempting to show how these two points of view may affect church building, I want to say a word about the articles that have already appeared. The first is by the Rt. Rev. Henry C. Potter, Bishop of New York; the second by the Rev. William Frederic Faber; the third by the Rt. Rev. C. K. Nelson, Bishop of Georgia; the fourth by the Rev. Daniel Dulany Addison; the fifth by the Rev. Herman Page; the sixth by the Rev. John W. Suter.

Notwithstanding the fact that all these men belong to the Protestant Episcopal Church there is one note in every paper, which surely applies to every faith, that church architecture should be a reverent art. This surely is of absolutely prime importance. Another point, which is most admirably put by Dr. Faber, is that the building should express our faith; for, he adds, "religious differences, which are sufficiently vital to keep Christians in separate bodies, must be sufficiently vital and organic to put forth architectural forms fitted to express truthfully what each is." In thus expressing our faith it may well be that even in one communion there

INTERIOR, KING'S CHAPEL, BOSTON.
Looking East.



ST. MICHAEL'S CHURCH, CHARLESTON, S. C.
Built 1760.



PRESBYTERIAN CHURCH, SAVANNAH, GA.
Built 1819.



ST. PHILIP'S CHURCH, CHARLESTON, S. C.
Built 1837.

may be differences in the point of view, and some congregations may hope with Mr. Suter that the time has come for the voice of a prophet and wish to insure, even at some architectural sacrifice, that he shall be heard; while another, like Mr. Page, may feel that it is more important to have the mystery of nave and aisles, even if some seats are thereby injured.

The letters as a whole are very helpful, and Dr. Faber's paper especially seems to me one which every architect who is to build a church should read, mark, learn and inwardly digest. His horror of insincerity, his plea for more knowledge,—both on the part of clergy and architects,—are things which should be laid to our hearts. Bishop Nelson calls attention to two points which every architect ought to know, that a chancel arch is not a necessity, and that an east window which obscures the altar with its glare is bad. Dr. Addison, in urging adherence to the traditional Anglican forms of Gothic, gives the true reason for the omission or subordination of the chancel arch, the accent that should be laid, and the importance

that should be given to the choir and sanctuary. It seems perhaps a little strong to say that columns "should never be sacrificed to any idea of utility," but it is very pleasant for an architect to hear such an expression

from one outside his own profession. Still more must we feel indebted to him for his advice that "the educated and understanding architect should never give way before the amateur clergyman or the ignorant layman." Architects would choose always to work for clergymen who had such sound views as Mr. Addison on matters architectural, and they might feel well content to sit under such a man and accept what he has to say in regard to his own profession as authoritative. This attitude is, in fact, a recognition of the value of trained service, expert not amateur.

Men of the world, especially I think professional men, like to see in a clergyman the stamp of his profession. The clergyman who appears and acts on most occasions as a mere layman will rarely command the respect and attention that is given to the clergyman who believes his calling is in-



PULPIT, PRESBYTERIAN CHURCH, SAVANNAH, GA.



A SMALL PARISH CHURCH WITH ROOD SCREEN AND PULPIT OUTSIDE.

deed "Holy Orders," and that by his calling he is set apart from his lay brethren, having graver duties, graver responsibilities.

I propose to try to indicate what architectural expression belongs to the two extremes, the type which emphasizes the altar, the type which emphasizes the pulpit.

The altar type centers the whole interest at the altar, and builds the church around it. It begins with the sanctuary, where the highest act of worship takes place. Around the sanctuary is everything connected with the service, the seats for the choir and clergy who voice the prayer and praise of the congregation, and the various rooms which allow the service of altar and choir to be reverently conducted and in due order. Then, and then



A LARGE PARISH CHURCH WITH ROOD SCREEN AND OBJECTIONABLE EAST WINDOW.

only, is consideration given to the body of worshipers. So distinctly emphasized is this fact, of the all importance of the choir as opposed to the nave, that a whole series of buildings arose which were nothing but a choir, such as the college chapel type. The nave therefore is distinctly subordinate, and because so subordinate it may, in a great church or a cathedral, be almost separated from the choir by chancel arch and structural rood. Such division may be really necessary, as the worshipers at the daily services may well be all in the choir. In the smaller church, however, of ordinary parish dimension, chancel arch and structural rood are not only unnecessary, but also a distinct injury to the church. For chancel arch may serve then merely to injure and dwarf what should be, if not the largest, at least the most glorious art of the church.



S. CUTHBERTS, WELLS, ENGLAND, TYPICAL PARISH INTERIOR, LOOKING WEST.

The nave then, though so distinctly subordinated to the choir in the altar type, has yet its special significance and its special structural form. If the choir or sanctuary typify the head of the Church, the nave is the body; if the sanctuary is Christ in glory, the nave is the Church militant which, through the rood, passes to the Church triumphant.

In all that the historic Church has built, has imagined or has borrowed, she has ever seen in it some symbol of her Faith. So the form of the cross, whatever its origin, is associated in Christian churches with the cross of Christ, and the triple form of the aisle with the Trinity. It is seen therefore that the cruciform and the aisled nave have a significance so important, and an association of so many centuries with the history of the Church, as to make us think carefully before they be



THE CATHEDRAL, WELLS, ENGLAND, TYPICAL ENGLISH GOTHIC.

discarded for utilitarian reasons, lest in the exchange we lose more than we gain. Seen in this light, Dr. Addison's statement that "columns should never be sacrificed to any idea of utility" is not the extravagant fancy of an idealist, but the sober judgment of one who weighs the evidence.

If the nave represents the people, and the choir the ordained channel through which the people approach God, the font is the ordained means by which the people are admitted to the Body of the Church. It is therefore significant and therefore right that the font should be in the main body of the church, and preferably at its actual entrance. Baptism is the first great sacrament of the Church, and the baptistery is rightly given architectural accent and importance at this place.

In such buildings as these I have described the preacher, who expounds the Word or the doctrine of the Church, is distinctly subordinate to the priest. The latter stands between God and His people, and, in a peculiar way and with peculiar power (the gifts bestowed in ordination), presents to God the worship, prayer and praise of the people. More than that he gives them the sacraments,—baptism and the holy eucharist and the blessing of God.

In all such acts he is speaking the words of the

Church, he is teaching with all the authority of the accumulated spiritual inspiration of the ages. When he enters the pulpit he is still the priest, he may also be the prophet, inspired of God, but he is, after all, very much on his own resources, speaking indeed God's message as God has given him power or ability so to do, but he is not necessarily, as he is at the altar, speaking with authority.

The pulpit then is quite subordinate in such a church. It is never in the sanctuary, it is rarely in the choir, except in great cathedrals or college chapels where the choir contains everything that is necessary for the complete service of the Church (except the font). It is generally outside the rood screen and sometimes, especially in a large church, actually in the nave, so as to bring the preacher in closer touch with his hearers. When the priest is at the altar or in the choir it is almost immaterial whether or not the people can hear his words, for all know what he is saying; but in the pulpit it is essential



PARISH CHURCH, WITH TOWER AT THE CROSSING.

that every one should hear. The position of the pulpit will depend then, not so much on historical precedent, but on the size and plan of the church, and it will be so placed as to give the preacher the best opportunity to be heard. This altar type of church began when the early Christians adapted basilican forms to the service of the Church, but it came to its perfection only with the more fully developed service of later centuries, and found its full fruit of architectural expression in the magnificent period of church building which marked the centuries from the twelfth to the fifteenth. The builders of that time were equally interested in the wonderful problems of the vault and its supports, and in the significance and symbolism of the structure thus evolved. England had her own special architectural expression, less scholastic than that of France, but in many ways more sincere and more lovable; and when England refused to acknowledge the spiritual sovereignty of Rome, her architecture became, in a still more vital way, the expression of the English branch of the Catholic Church, and it was in a fair way to develop a very beautiful and very distinctive structure when the



ST. MARY'S PARISH CHURCH, TAUNTON, ENGLAND.



INTERIOR, THE OLD NORTH CHURCH, BOSTON, MASS.,
LOOKING WEST.

spirit of the Reformation for a while stopped all progress in this direction, and turned the thoughts of the Church towards a very vital aspect of truth which had been in danger of being lost sight of in the elaborate forms and ceremonies which had grown up around the ritual Church. From forms and ceremonies there was an abrupt reaction, and a return to the simpler ways of the very early Church, more earnest study of the Bible as the sole sure guide to truth, and a great emphasis placed on the fact that Christ Himself was the mediator, and no man needed any other between him and God.

Under this aspect the interpretation of the word of God, the teaching from the pulpit, became more important than the sacraments, and it was the prophet rather than the priest that men sought, and all this was expressed in the church. With this vital change in the religious point of view came all the great change in the arts which we call the Renaissance. Both movements were really endeavors to hark back to earlier and half-forgotten days. Both movements were intended to recover truth from the past, and both, in the endeavor, lost some of the truth inherent in what they had discarded. The art of the mediæval ages was despised and the ritual of the Church became anathema. Now in England they could not well pull down all the old churches and cathedrals and rebuild to suit new views. We may be very thankful that they did not, and also very sorry for the destruction and havoc they did effect, but the new churches, built in the newly revived classic manner, were the architectural expression of a faith which put more trust in the pulpit than in the altar. In our own country, where all was to be from the beginning and where our branch of the Anglican Church had been influenced by the more thoroughgoing reactionaries who disdained even the spiritual heritage of the historic church, we developed freely the pulpit type of church. The altar, now but a table, is set in a shallow apse, often

hardly more than a niche; the choir of men and boys, replaced by unvested mixed choirs, has no need of a specially set apart place. The need of a great chancel is gone. The pulpit is important, and it is therefore imperative that as many as possible shall see and hear the preacher. Thus has grown a very simple and often a very dignified and noble type of church, representing truly a phase, an aspect of the Church's teaching. As an architectural problem this is a far simpler one than the old problem, but some fifteen centuries went to the development of the older type, while but a few have had their influence on the other, and those few are centuries when architecture and art were not looked upon with favor as handmaids of the Church. We do not therefore see any such perfect architectural expression of the pulpit type as we do of the altar type. The New England meeting-house type and the Virginia churches were simple, sober, dignified, but they were not perfect auditoriums, and the attempt to make good auditoriums has resulted in losing all dignity, all sense of a reverent art. We have yet to see a really first-rate architectural expression of the pulpit type of church.

In the mean while times have changed, are changing all the time. The church of the fifteenth century is not the church of to-day, and we cannot honestly appropriate the architecture of that time. In the average modern church we see neither the altar nor pulpit in its extreme type, rather it is a modification of each, a right appreciation of both that is to-day demanded. While I believe the vital Gothic of the fifteenth century in England will always remain the best point of departure, there are many cases where it will not always be desirable to follow the Gothic lead. In a New England village, in any place with the stamp of Georgian architecture strongly marked, a Gothic building is apt to look out of place. In the South and Southwest, where French and Spanish types have already made their mark, Gothic again is apt to look ill at ease.



INTERIOR, THE OLD NORTH CHURCH, BOSTON, MASS.,
LOOKING EAST.



ST. PAUL'S CHURCH, AUGUSTA, GA.
Built about 1750.

But in most cases, and in every place where there is enough country for a settling, the simple, unassuming, lovable English Gothic is at home. Therefore while not denying that there is a logical plan and exterior for the modern church along classic lines, I propose to confine myself to a Gothic church in attempting to say what a modern church should be. This I will reserve for another paper.



ST. PETER'S P. E. CHURCH, PHILADELPHIA, PA.
Dedicated 1761.

M RODIN, the eminent French artist, has contributed to the *North American Review* an interesting article dealing with "The Gothic in the Cathedrals and Churches of France." No architect or sculptor, he tells us, has ever been able properly to restore a Gothic church or cathedral. The Italians, it is true, continue to repair their ancient monuments; but they only touch the parts that are falling to ruin; whereas when we repair we insist on restoring, and spoil the old in order to harmonize it with the new. . . .

In one direction the Gothic sculptors surpass the Greek. The Greek temple is the same everywhere, and similarity, identity, is not a culminating quality of art. Life is made up of strength and grace most variously mingled, and the Gothic gives us this. . . . In order to reform our present stereotyped methods of art we



OLD CHURCH AT LANCASTER, MASS.
Charles Bulfinch, Architect.

want a second Renaissance. For a long time I hoped that in a near future this might be; but I have ceased hoping to-day. It would require a catastrophe capable of overturning and changing everything. Of course I am speaking of what is likely to happen in the next twenty-five or fifty years. Life is eternal; and, sooner or later, things must alter for the better. But, so far, in our modern architecture I see nothing that gives encouragement. We have intelligent men who are sufficiently educated. They copy everything; they ferret out the style of Nineveh, as well as the styles of Louis XIV. and Louis XV.; but what they produce is without soul, without art, and is insignificant. They repeat, but only as the parrot does. For long years we have done nothing but turn out from our colleges young men stuffed with useless scientific lumber; and they very quickly lose it all, and there is nothing to take its place.

Boston Brickwork. II.

RECENT RESIDENTIAL WORK.

ABOUT the middle of the last century the narrow limits of the original peninsula became crowded with buildings and the city began to push out along the road towards the neighboring town of Roxbury. A large expanse of marsh was filled in and raised to the general level and a series of avenues and squares was laid out which was quickly covered with dwellings of brick. These were almost universally crowned with "French" roofs and had formidable "high stoops" or long outside flights of brownstone steps leading to the front door, which was nearly a full story above the sidewalk. In plan most of these dwellings contained a kitchen at the rear and a dining room at the front of the basement, the first floor being given over to a front and back parlor. The stories were high studded and decorated with much plaster cornice and patterns in stencil. Marble mantels and thresholds were essential, while some had balconies and trellises of cast iron following the outlines of the circular bay windows or "swell fronts" which repeated themselves with monotonous iteration. It is needless to say that the hand of the trained architect rarely appeared, and the entire South End forms a vast architectural desert, only relieved by the attractive "parks" which faintly recall the "squares" of Bloomsbury. Though now deserted by fashion, this region has not lacked representation in contemporary literature, and Howells's novel, "The Rise of Silas Lapham," gives a vivid picture of its appearance and former social life.

With the filling in of the Back Bay and the movement to the "new land" from 1870 to 1890 came the building up of the section between Arlington Street and Massachusetts Avenue. The houses in that district are an open book of the architectural history of that period, starting with the pseudo-French classic houses at and near the Public Garden (which, as a matter of fact, average much the best of the lot) and ranging through blocks of Victorian Gothic, Queen Anne and Romanesque to the western layer of 1890 Colonial. Happily the most of the poorer Romanesque was confined to inferior streets. Except as torn down and rebuilt the proportion of work in this district which to-day would be called interesting is small. The street arrangement is particularly poor compared with that of the old South End, and there is no system of emphasizing certain points or relieving the rather barren perspectives.

The work of present day interest lies mostly west of Massachusetts Avenue, the three best groups being the houses on Bay State Road, Commonwealth Avenue, from

Massachusetts Avenue to Beacon Street and the Fenway. Here, although especially on Bay State Road, "conservatism runs riot," and most of the façades "reek with simplicity," there are a good number of thoughtful and really well studied designs, showing some attempt to combine originality with refinement. On Commonwealth Avenue, west of Massachusetts Avenue, there is a collection of houses of unusual interest. Comparisons of the value of designs are difficult and dangerous and largely a matter of personal taste, but in the writer's opinion the house of Mr. R. S. Bradley, on Commonwealth Avenue near Charlesgate East, by Little & Browne, stands easily the first among the newer mansions of Boston. The design rather suggests the English Georgian or high London house of the most aristocratic type. The material is mostly brown Roman shape brick, with trimmings of Amherst stone and purple marble porch columns. The detail throughout, whether of stone or wrought iron, is charming.

The splendid width of the avenue and the exceptionally fine location have inspired the owners of these properties to somewhat greater things than elsewhere.

The best instance of this is afforded by the noble façade of the Minot house, by Peabody & Stearns, with its imposing flight of steps and somewhat swaggering portico. This adjoins the Bradley house, of which previous mention was made. Less pretentious, but still of great interest, are the two houses by R. Clipston Sturgis, with their very English windows and dignified entrances. These façades have a more studied and refined appearance than any other red brick fronts that we recall in Boston, and the rear façades on Beacon Street are not less interesting. The material of the doorways is gray terracotta. Near these is the picturesque "flatiron" house by C. Howard Walker, recalling, with its tourelles and steep roof, a Normandy manoir. The doorway has refined detail. On the same side of the avenue, farther east, are two simple and delightful fronts by Little & Browne. No. 22 is in limestone and red brick, with a slender column treatment along the lower story. No. 23 is in light stone and brown brick. The simplicity and beauty of these houses is enhanced by the propinquity of a somewhat forced exhibition of Tiffany glass in a tall house on the one hand and a craggy line of promoters' Romanesque on the other.

The south side of the avenue, between Charlesgate West and Kenmore Street, exhibits a row of good houses in widely varying styles. In a nation of our own cosmopolitan make-up anything approaching uniformity of architectural style seems far distant, and for the present we shall probably have to content ourselves with what comes to us. No. 26 shows a simple but interesting front in free Colonial, by W. Whitney Lewis. The



20. PORCH OF BRADLEY HOUSE.
Little & Browne, Architects.



21. HOUSE OF R. S. BRADLEY, ESQ.
Little & Browne, Architects.



22. HOUSE, COMMONWEALTH AVENUE.
Little & Browne, Architects.



23. HOUSE, COMMONWEALTH AVENUE.
Little & Browne, Architects.



24. MINOT HOUSE, COMMONWEALTH AVENUE.
Peabody & Stearns, Architects.



25. HOUSES, COMMONWEALTH AVENUE.
R. Clipston Sturgis, Architect.



26. HOUSE, COMMONWEALTH AVENUE.
W. Whitney Lewis, Architect.



27. DOORWAY, HOUSE, COMMONWEALTH AVENUE.
C. Howard Walker, Architect.



28. HOUSE, COMMONWEALTH AVENUE.
C. Howard Walker, Architect.



30. HOUSE, COMMONWEALTH AVENUE.
Kilham & Hopkins, Architects.



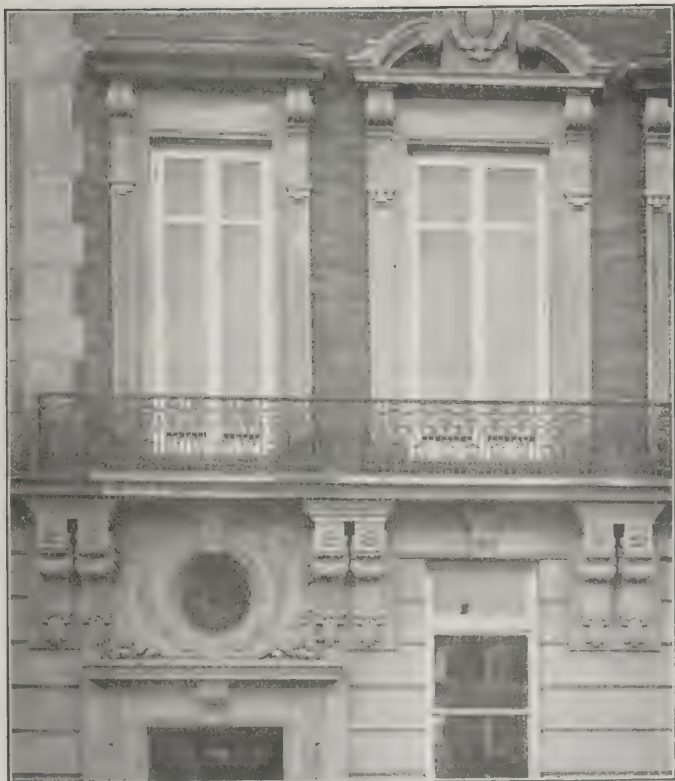
31. HOUSE, 480 COMMONWEALTH AVENUE.
Chapman & Frazer, Architects.



32. HOUSE OF ROBERT S. PEABODY, ESQ.
Peabody & Stearns, Architects.



33. HOUSE OF MOORFIELD STOREY, ESQ.
Peabody & Stearns, Architects.



29. DETAIL, HOUSE, COMMONWEALTH AVENUE.
Kilham & Hopkins, Architects.

materials are water-struck brick and white marble. Nos. 29 and 30 show an elevation in quite modern French by Kilham & Hopkins. The materials for the walls are buff Amherst stone and brown Roman brick, and the mansard is of copper, treated in green. No. 31, by Chapman & Frazer, is an interesting and homelike house, rather Dutch Renaissance in quality, in Amherst stone and purplish red brick. The latter two houses, as well as the Minot and Bradley houses referred to above,



34. ENTRANCE, FENWAY.

have iron fences, showing that the returning vogue of the front fence has reached Boston.

Of the other houses in this block, two are English in style, one Colonial and the balance in the commonplace Renaissance of the recent promoter.

Near by, in the Fenway, is found another good row of houses in the most delightful location in the city. These houses face west, looking across the wide expanse of the Fens with their streams and bridges. The first dwelling house, going from Boylston Street, is that of Mr. Robert S. Peabody (Peabody & Stearns, architects). Though less pretentious than one or two of the houses referred to above, it ranks in some ways as the most charming façade in Boston. The design with the great central window distinctly implies the artist's home, and the entire



35. HOUSE, WESTLAND AVENUE.
H. Langford Warren, Architect.

conception is worthy in every way of its gifted owner. The material is light stone and brown Roman brick which, by a series of happy selections, is here continued for some distance along the street in either direction and forms a group of rather notable buildings. These buildings, the Hotel Carleton, the Massachusetts Historical Society's building, and that of the Medical Library, continue the color scheme of Mr. Peabody's house and that of Mr. Moorfield Storey, adjoining, which is also by Peabody & Stearns (No. 33).

Farther along the Fenway are some Colonial houses, the doorway of one of which we illustrate (No. 34), and on Westland Avenue a charming and scholarly little detached house by H. Langford Warren, in red and brown brick with gable roof, a balustrade and garden gate. This house is a pleasing surprise in such a place as Bos-

Modern Brickbuilding in France.

BY JEAN SCHOPFER.

THE present French architecture continues to employ bricks in a most judicious manner. It is evident that the qualities of this material must be positive and excellent, since it remains in favor in a country where stone for building abounds, where it is of superior quality as to duration and facility of cut, and where the architectural traditions are founded on stone architecture.

I will show in this article some modern houses built of brick in Paris, besides some factories of the town where bricks have been employed architecturally with the best effect. The houses shown are mostly apartments. One knows how very numerous they are in Paris, where the custom of having private houses is much less general than in England or America. One knows also in what a narrow programme the French architect is confined. He is forbidden to build higher than five or six stories; he is not allowed on the façades any decoration in high relief that exceeds the dimensions permitted by the rules of the town; there are also limited dimensions for the courts, large and small, — such are the general restrictions that hamper the liberty of action of Parisian architects. How can one avoid monotony? How is it possible to give a



36. HOUSE, ⁵²BEACON STREET.
R. Clipston Sturgis, Architect.

ton, and certainly goes to show that in city work "some things can be done as well as others" (No. 35).

On Beacon Street opposite the Common there is a quiet house in gray brick by R. Clipston Sturgis, with a rather low porch.

Here and there along the older Back Bay streets new and attractive fronts are beginning to appear, in many cases replacing houses which are scarcely twenty-five years old. Probably it will be only a short time before the entire district will have been largely remodelled or rebuilt. The following article will illustrate the work along Bay State Road and the newer streets in its vicinity.

ANCIENT PAINTED TILES.

THE use of painted tiles for decorative effects dates back as far as 3300 B. C., the walls of the palaces of ancient Egypt being covered with them. The Persians, again, modeled pictures in low relief upon the narrow edges of large flat bricks built into the walls of houses in their capital of Susa; the Louvre, in Paris, contains the original of one such frieze representing a procession of black archers, with dresses and armor colored in brilliant enamels. The knowledge of enameled pottery lingered on in Persia through all the great changes of empire, and Persian workmen, or Arabs trained by Persians, carried the art of tile making and painting far and wide, until their characteristic effects of blue, green, purple and white were familiar in countries as distant as Spain and India. As used in Mohammedan mosques, the decorations were applied more in the form of tiles than of bricks. Large surfaces were covered with the regular courses of tiles in repeating patterns, or with ornament broken up into panels.



APARTMENT, RUE MARCADET.
Leon Dupont, Architect.



APARTMENT, RUE VANJIRARD.

M. Bertrand, Architect.

personal and artistic character to façades whose essential lines are immutably alike? It is a difficult problem to solve, and the ingeniousness of architects is put to a severe test. We shall see how cleverly they arrive at varying their effects.

One other general remark applies to the houses here treated. Most of them are situated in the eccentric quarters of the city; most of them contain apartments of a moderate rent; they are all situated in popular quarters, inhabited by clerks in the civil services, employees in stores or shopkeepers.

It is necessary to inform my readers of this fact, as they might easily mistake these façades so elegantly decorated for houses of the west end of Paris. The desire to give a house situated in a popular quarter an architectural aspect is a novelty worthy of remark. Formerly such houses were left in the hands of builders. Landlords did not care to go to the expense of an architect. For them the working classes were not in need of comfort, much less of art; it was useless to build houses that could please them. If the houses brought in a good income nothing further was desired.

At the present time more generous and broader ideas have come to light. One is aware of the interesting revival in France, within the last twelve years, of the decorative arts. One of the characteristic tendencies of this movement has been to bring back art to simple and usual objects and at the same time to place it within reach of all.

Architecture has been very slow in following the example that was given by the *Artes Minores*. It was considered an art of luxury, whereas, in reality, archi-

tecture is of all arts the most necessary; this has changed nevertheless, some young architects have worked vigorously in opposition to the superannuated traditions. On the other hand, the city of Paris, in the annual competition for prizes for façades that it has established, is always careful to give one or two prizes to houses built in the popular quarters of the capital.

To-day the result is such that we find five or six houses built since a year or eighteen months in the eastern quarters of Paris worthy of being published in this review. Good architects from the School of Fine Arts have designed them, and some of them are worth more, architecturally, than certain façades of rich modern houses in the west end of Paris.

These are truly satisfactory facts, and I am certain that they will awaken great interest among architects and the American public, for to-day the movement that tends to better the conditions of existence among the working classes has become general. Its object is to bring art back to what it ought to be, viz., a beautifying of simple life, instead of being a luxury accessible to the rich alone. Besides, there exists in the United States a numerous and growing class of citizens who desire that the city should become more artistic, and that pains should be taken to give a pleasing aspect to the simplest and most useful buildings. It is certain that in the present time one or two handsome buildings are not sufficient to make a fine town; that was possible in Grecian cities, thinly populated, where, owing to the mild climate and the constitution of social life, citizens spent their time in the open air or in public places, discussing the interests of the city. In our modern cities it is not so; miserably poor houses flank either side of most of the streets, and



APARTMENT, AVENUE DE LA REPUBLIQUE.

M. Lefebure, Architect.



COURT, APARTMENT, RUE POMERUE.
Gabriel Morice, Architect.

only in the rich parts of the town do we find handsome façades. It is high time to think of embellishing the city itself and of bringing some art and beauty into the parts where the greater number of the population live. That a millionaire should build a palace in town and a sumptuous villa in the country, we can but congratulate the architect on the opportunity offered him to display his talent for luxurious buildings on a grand scale; but for one palace of that style two hundred simple houses are built. It is therefore important for the cause of good architecture and for the beauty of the streets that these simple houses should not be neglected by the architects who are to build them.

Here is a task that is interesting, useful and also difficult, I confess; for when one cannot dazzle the public gaze by antique colonnades, pilasters, frameworks of windows copied from those of the Palace of the Cancellaria at Rome, or of the Chateau of Blois, it becomes necessary to put in their stead simple lines combined with taste. Good taste is rare and cannot be bought.

This embellishment of houses of low rent is being attempted in Paris since several years, and that is why the illustrations given here seem to me to offer special interest.

I find nothing more typical from this point of view than the small house of the rue Marcadet, built by Leon Dupont. Though it is of

extreme simplicity, the façade is agreeable. Dark bricks are used alternately with light bricks in the framework of the windows and form the border on the façade; the windows are designed as windows in brickwork should be; lozenges of brick run along under the cornice, the consoles that support the cornice receive sunflowers as ornaments, and between the consoles are flowers also. One cannot well understand why the architect did not use bricks for the frieze; one can but admire the elegant arches of the shops on the ground floor.

But what should be remarked particularly, by the side of the modern house, is the ugly little house next to it. That is the style in which were built the houses in the poor quarters of the town fifty years ago; miserable boxes, with windows without the slightest trace of architectural design, or any desire to embellish by the smallest ornament the ugly façade. Two distinct epochs are there side by side, and I leave it to my readers to appreciate the new direction architecture has taken towards the improvement of inexpensive houses.

The large house in rue de Vanjirard, M. Bertrand, architect, is simple and satisfactory, with some ornaments of brick or enameled brick under the balcony and between the windows; the windows are designed with taste; there is a certain freedom in the ensemble that is even apparent in the way the two pipes from the roof follow the line of the cut angle at the corner of the two streets.

A building that is still more finished and of excellent



APARTMENT IN WEST END.
M. Klein, Architect.

composition is the house built by M. Lefebure, on the avenue de la République. It suffices to publish it without commentaries.

We find that French architects have the constant and laudable desire not to neglect the façades on courts. In modern apartments courts are spacious and elegant. When it is possible, by reason of the shape

of the ground, there are two courts, one the *cour d'honneur*, the other the *cour de service*. On the first are the windows of the bedrooms, dressing rooms, anterooms, etc.; on the second the kitchens, pantries, the servants' staircase.

In the *cour d'honneur* is often a handsomely decorated fountain, perhaps some trees, and always flowers; the façades are elegant. When there is but one court, that the *cour de service*, the architect does not forget that it is precisely in this court that are placed the windows of the rich apartments whose drawing rooms look on the street, and that the tenant who pays a high rent has the right not to have his sight offended by ugly buildings. So he does not hesitate to employ his art so as to give an agreeable aspect to this façade which is not on the street. In the United States it is not always so. I do not know a more unpleasant sight, and one that is less to the honor of architects and their clients, than the interior courts of their town houses. I have visited at New York the interior courts of blocks in the rich quarters, where houses have façades of twenty-five feet and are worth \$100,000 or more. The façades, built of the commonest bricks, are bare; the windows open like holes in the wall; not the slightest trace of ornament, no frieze, no effort whatever at embellishment. They might be the homes of working peoples, houses of the last category, were it not that one sees handsome curtains and lace blinds at the windows. The limits of the lot are marked by miserable low walls in brickwork that stand three or four feet away only from the dining room windows. Ropes are drawn



SURGICAL PAVILION, ST. ANNE HOSPITAL.

M. Peronne, Architect.

portion of the house that only one's self will see; it is of no consequence if it is ugly and vulgar.

Architects ought to join their efforts to obtain an improvement in the courts of town houses. It would not be a difficult undertaking. An understanding between landlords of the same block is not impossible; and in any case, in the new blocks that are being constructed, there ought to be a series of measures adopted to make the view of the courts pleasanter. Instead of brick walls to mark the divisions and that rise to the first floor, generally shutting out all light from the dining room, why not have slender iron railings that would allow light and air to circulate freely? Why not arrange the center of the block with a flooring of stone or cement, a fountain and, if space permitted, some trees? And, finally, is it not easy to build on the court, façades that have an architectural aspect instead of being the ugly walls they are?

It is to draw the attention of my readers that I have chosen for illustration the simple but elegant façade that is seen in the court of a house containing apartments of moderate rents in the rue Pomerue. The architect is Gabriel Morice.



ELECTRIC STATION.

M. Frieze, Architect.

from wall to wall, on which are drying kitchen clothes hung out by thrifty cooks (?). Such is the spectacle that the inhabitants of these sumptuous houses have under their eyes when they rise in the morning. One will only spend money on the façade that every one sees, to astonish "the man in the street." No expense is to be incurred simply to decorate a

The next illustration shows a house in the west of Paris, the work of M. Klein. It is built of enameled bricks, with decorative details of terra-cotta. I would especially praise in the façade the geometrical decorative pattern in high relief that is repeated on the frieze under the balcony. The remainder of the decoration is borrowed from the vegetable realm. M. Klein has chosen the thistle flower and its leaves, that are repeated in the tympanums of

the windows and of the dormer windows, on the consoles that support the balconies and windows. The decoration has much realism and style at the same time, but he has used it too abundantly; besides the thistle is in itself very sharp. It would be more in place on the capitals of a florid Gothic church of the fifteenth century, where all the angles are acute, than on the façade of a modern house.

Let us now turn from dwelling houses and see the pavilion for surgical operations of the hospital of St. Anne in Paris. This is a work in bricks, pure and excellent on all points. It is due to M. Peronne, who seems to have remembered the Dutch style in the way he has built the gables, but interpreted with freedom. It suffices to draw the attention of the reader to this simple pavilion, with its elegant lines; all who are accustomed to examine architectural works will recognize at first sight what it is that gives it its value.

The next illustration will serve as the bridge to lead us to a new class of buildings. It represents the factory and the offices of one of the electrical stations in Paris. At the angle of two streets a dwelling house with apartments belongs to the factory. It is all built in white stone and red brick. One can see with what taste and care the façade of the factory, where the offices are, were designed. The architect is M. Friezé.

It is well known that generally factories and workshops are extraordinarily ugly, and that no architectural design has interfered with their growth. Unfortunately our modern towns contain a great number of factories that display their dirt and the ugliness of their unfinished walls pierced with square holes, without even frames for windows. A factory that is practical, comfortable for the work people and that would present an architectural interest would be an ideal factory that our fathers declared impracticable. In the United States, however, some factories have been built that come very near to that ideal, and here is one built in Paris by M. Friezé which is a very good example of what a modern factory, designed by an intelligent architect, can be. This building has its value constructively; the masses and the voids are in happy symmetry; the strong piles mount up to the cornice; the windows are grouped ingeniously; steel supports, where they are necessary, do not hide away as if they were ashamed to show themselves; and this façade, simple as it is, is a work that has been studied and conceived by a man who knows his profession and who has not disdained to apply his talent to a utilitarian factory.

Such are some of the most interesting buildings in brick of the last few years.

One can say in conclusion that bricks are very generally used in the present time. Owing to the combination

of colors that they allow, it is possible to satisfy the very characteristic taste of this period for polychrome decoration. By the help of bricks, bright colors have again appeared on the façades of our houses. They are not always of a happy effect, but the tendency is excellent. We have henceforward the hope that in time we shall emerge from the gray kingdom in which architecture has flourished for three centuries.

STRUCTURAL DEVELOPMENT BY ENACTMENT.

OUR building laws are epitomes of past rather than current practice and are seldom sufficiently elastic to allow for new methods or new constructions. It is probably not too much to say that most features of modern fireproof and steel frame construction have been evolved without the sanction and often in opposition to existing laws, and have only been legalized after having stood the tests of time. The laws follow the development but often operate to thwart or divert the best progress. We are all of us prone to travel in ruts. When the

civic authorities prescribe exactly what we shall do in a great variety of emergencies we are very apt to follow their lead rather than to specially study the best solution, irrespective of statute, for each structural emergency. There have been repeated illustrations of the extent to which well intended and carefully considered building laws have been the means of permitting and extending the use of constructions which would probably never have come into vogue except for possible interpretations of the statutes. No building law yet devised has really encouraged fireproof construction. Our laws have repeatedly fostered some



A MODERN FACTORY.

M. Frieze, Architect.

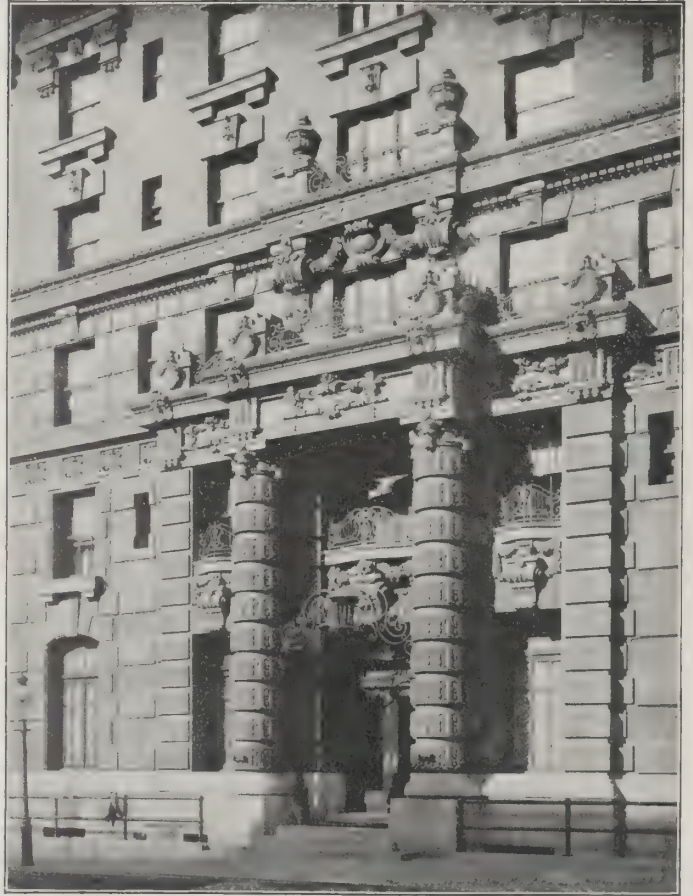
of the most worthless forms of constructions which were devised simply to evade the law and to reduce the cost at the expense of security. The fact that fireproof construction has developed in spite of various legislative checks and the discouraging competition of worthless systems is unquestioned evidence that there is a real demand for the best, and that it is valued properly by those who are competent to judge thereof. We must have building laws, and such laws are necessarily conservative, looking to the past rather than to the future; but in these days of progress it is not wise for any one to say to architect or constructor that there is no room for improvement. We believe that, on the whole, better results are accomplished when the care and forethought are devoted to the selection of city officials clothed with proper discretionary powers, rather than when such care is expended in the elaboration of a building law such as that recently adopted by Cleveland, whose only defect is that it says too much and leaves nothing for future developments.

Editorial Comment and Selected Miscellany

MR. FRANK MILES DAY of Philadelphia on March 10, at the Massachusetts Institute of Technology in Boston, gave a public lecture illustrating the recent and more prominent examples of municipal improvement projected in the various large cities of this country, his lecture covering in substance the same ground as the report which was read by him at the recent Convention of the American Institute of Architects at Washington. The large hall at the Institute was crowded with an interested and appreciative audience. The subject is one which has evoked a rather surprising interest, not only from the architects and those who have a personal interest in matters artistic, but from the people generally, who are supposed to be more or less indifferent to æsthetic demands. In fact we believe the country is fast becoming awake as a whole to municipal possibilities. The enormous and most elaborately studied railway stations at New York and Washington, the development of the block plan at Cleveland which has proven a pioneer in this line, are improvements which would have been impossible a decade ago, not so much on account of financial or artistic ability as because the country and the people did not want them, while the extraordinary interest displayed by the masses in the adornment of the New York Subway, the enthusiasm with which public institutions everywhere are ably seconding large schemes for municipal improvement, are most encouraging signs of the times which show unquestionably that we have rather passed the initiatory stage in our national art, and are really ready to try conclusions with, and satisfactorily solve large public problems.



HOUSE AT CHICAGO, ILL., BUILT OF TIFFANY ENAMELED BRICK, GRANITE FINISH.
Ernest N. Mayo, Architect.



MAIN ENTRANCE, HOTEL, AMSTERDAM AVENUE,
NEW YORK CITY.

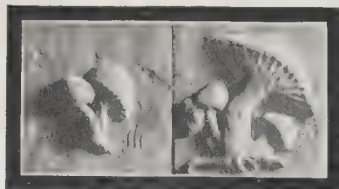
Terra-cotta furnished by the New York Architectural Terra-cotta Co.
H. B. Mulliken, Architect.

It is essentially the age of big schemes, which are put forth not as money makers, but as matters of public policy. Where twenty years ago a business of a million a year was extraordinary for an architect, there are now a number in our large cities who are finding their hands more than full with problems running up into the millions in cost and not of a private or speculative nature at all, but concerning monuments which are intended to be permanent and to have a lasting value as municipal factors. Of all cities, however, Boston, which was the first to develop a comprehensive park scheme, is the most backward in its municipal growth. This point was particularly brought out by Mr. Day's lecture. At the same time there is



DETAIL BY PERTH AMBOY
TERRA-COTTA CO.
Clinton & Russell, Architects.

hardly any city wherein the possibilities are so great. There is no civic center in Boston to-day. The City Hall is hidden away on a narrow side street. The State House is, to be sure, the most conspicuous object in the city simply because it is perched on the highest hill, but



FAIENCE TILES MADE BY HARTFORD FAIENCE CO.

its surroundings and emplacement are unworthy in nearly every respect, and thus far no intelligent scheme has been evolved to better them. Copley Square is the nearest approach to an architectural focus, but the streets leading to and from it are in a state of transition, the Museum is booked to leave it very soon, and the Technology buildings are pretty surely to shortly be removed, leaving only Trinity and the Library as permanent fixtures. There is consequently a fruitful field in Boston for muni-



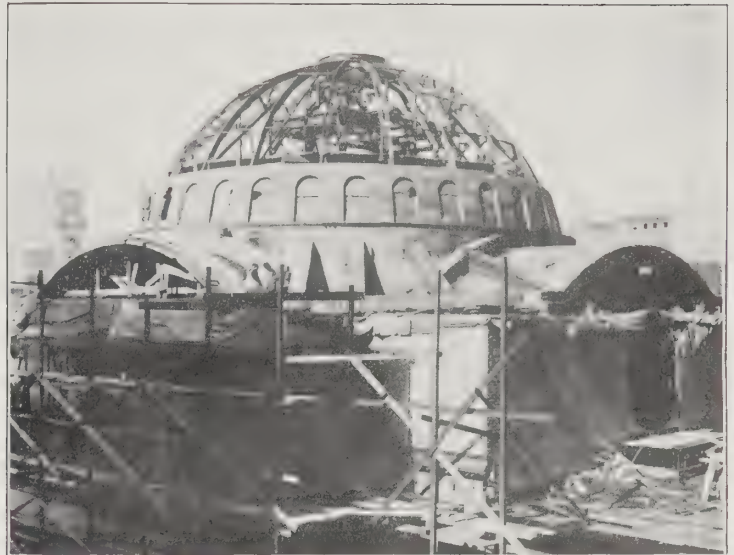
ST. LAWRENCE CHURCH, WEST HAVEN, CONN.

Built of Jewettville Red Brick, Fiske & Co., New England agents.
Joseph A. Jackson, Architect.

icipal improvement, and it is of interest to know that Mr. Day's lecture was in a sense the first step in an organized effort which is being made by the Boston Society of Architects to thoroughly study the problem of municipal improvements for Boston and to bring out the best possible solutions.

A TEST OF GOOD CONSTRUCTION.

EARLY on the morning of February 11 fire was discovered in the upper portion of the Congregational Building on Beacon Street, Boston, a first-class fireproofed



GUASTAVINO TILE CONSTRUCTION EMPLOYED IN MADISON SQUARE PRESBYTERIAN CHURCH, NEW YORK CITY.

McKim, Mead & White, Architects.

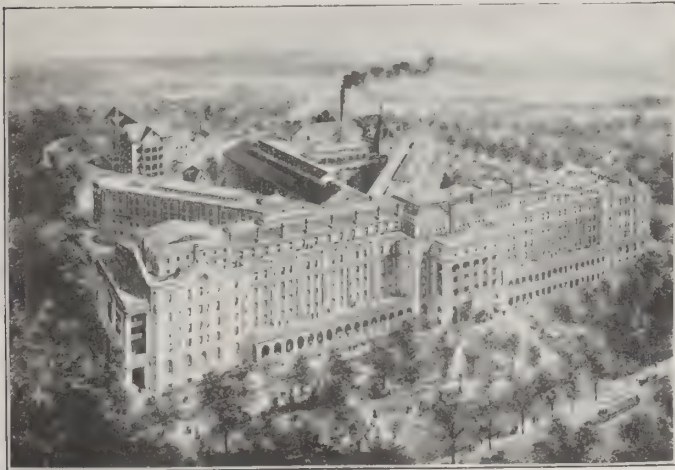
structure designed by Shepley, Rutan & Coolidge and erected only a few years since. The fire apparently started in a telephone conduit, and there is not the slightest doubt that nothing but the excellent construction of the building prevented it from being a total loss and also from communicating the fire to adjoining structures. Immediately on the east is the building of the Boston Athenæum, of second-class construction, containing almost priceless literary and artistic treasures. Had the fire been allowed to spread at all these would undoubtedly have been consumed. The city streets were in a fearful condition owing to ice and snow, and the grades leading up to Beacon Hill were so difficult that the fire had full twenty minutes' headway before the department could bring any stream to bear upon it. One office in the eighth floor was considerably damaged, a stock room containing the telephone cables was destroyed, on the seventh floor two rooms were entirely burned out, and of course water and smoke created a certain amount of damage, but the total loss was surprisingly small notwithstanding the headway which the fire acquired and the difficulty under which the firemen labored in fighting it. Business has not been interrupted in the building for a single day, and,



CHRISTIAN SCIENCE CHURCH, ST. LOUIS, MO.

Built of St. Louis Hydraulic Press Brick.
Mauran, Russell & Garden, Architects.

barring some broken glass in the lower story, the external appearance is unchanged. Here were certainly all the conditions for a conflagration, and the result showed



BATTLE CREEK SANATORIUM, BATTLE CREEK, MICH.
Built of Ohio Mining and Manufacturing Co. "Shawnee" Brick,
Thomas Moulding Co., Western Agents.

beyond question that properly constructed and applied terra-cotta fireproofing and terra-cotta partitions are amply sufficient to protect from any extensive spread of a fire starting from within. This occurrence also illustrated the folly of permitting inflammable structures to be erected in the business portion of the city.

THE National Board of Fire Underwriters is composed of one hundred and twenty of the leading fire insurance companies doing business in the United States, its purpose being to influence the introduction of im-



MANUFACTURING BUILDING, PHILADELPHIA, PA.
Roofed with Bennett's Unglazed Spanish Roofing Tiles.
D. W. & W. D. Hewett, Architects.

proved and safe methods of building construction, the adoption of fire protective measures, and efficient organization and equipment of fire departments. In view of the excessive waste by fire in this country the board has appointed a committee charged with the duty of organizing an engineering department composed of men standing high in their professions, and through them it is proposed to investigate conditions for improvements that would minimize the sweeping fire or conflagration hazard. A staff of engineers has been organized and to-day there are in the field four parties, each collecting data and making tests in some different city

Mr. E. H. Hopson has been appointed chief engineer. Captain G. S. Curtis, the engineer in charge of the investigations of the fire departments and their auxiliaries, in addition to a professional education in electrical and mechanical engineering, had, until taking up this work, been connected with the Boston Fire Department for a number of years and has also visited various cities in Europe and made a close study of the fire-fighting facilities of the Continent. The entire work is under the immediate supervision of Mr. Herbert Wilmerding, the secretary, with offices at 135 Williams Street, New York. He has made a very careful study of the problems involved in a number of our large cities, and is abundantly



TELEPHONE BUILDING, GRAND RAPIDS, MICH.
Faced with "Ironclay" Brick, F. H. McDonald, Agent.
Williamson & Crow, Architects.

able to properly direct the work of the department. The federal government has detailed two engineers of the United States Army to investigate and review the reports of each city. All of the work will be absolutely free from any influence except such as would tend to produce the most accurate information. The department will have no control over rates of insurance, and the reports will be criticised by men in no way connected with the business of fire insurance, and having no reason for endorsing a report that stated other than the facts or that asks for improvements or changes that are not in the interests of the public.



UPPER STORIES, TRIBUNE BUILDING, CHICAGO, ILL.
Terra-Cotta by Northwestern Terra-Cotta Co.
Holabird & Roche, Architects.

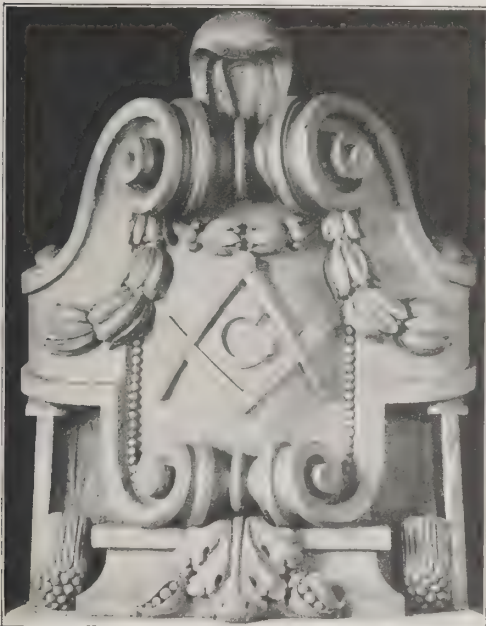
The work that this commission can accomplish is the kind which is urgently needed. The insurance experimental station at Boston has done excellent work and will



DETAIL BY NEW JERSEY TERRA-COTTA CO.

continue to do so, but the conclusions arrived at by a body so closely identified with the National Board will be received more widely and will have more influence than the action of any local board. There is every reason to

believe that this commission will start its work without any bias, without any attempt to reach any conclusions except such as rest upon a



DETAIL BY INDIANAPOLIS TERRA-COTTA CO.
Richards, McCarty & Bulford, Architects.

basis of unquestioned fact, and the report which they will issue will be anticipated with a great deal of interest.

NEW BOOKS.

ELEMENTS OF MECHANICS. Forty Lessons for Beginners in Engineering. By Mansfield Merriman, Professor of Civil Engineering in Lehigh University. 12mo, 172 pages, 142 figures. Cloth, \$1.00 net. New York: John Wiley & Sons.

During the past forty years great advances have been made in the methods of instruction in all branches of applied mechanics, but little or no change has taken place in the manner of presenting the subject of rational mechanics. This elementary volume is an attempt to apply the best methods of applied mechanics to the development of the fundamental principles and methods of rational mechanics. To read this volume with interest and profit, only a knowledge of plane geometry, elementary algebra and plane trigonometry is required. It is intended for manual training schools, freshman classes in engineering colleges, and for young men in general who have the preparation just indicated. To all who may use the book it is

strongly recommended that many numerical problems should be solved, and that in so doing the actual forces and bodies should be always kept in mind with the principles that govern their relations. Forty lessons thoroughly mastered will form a solid substructure on which applied mechanics may safely stand. If this be accomplished and an advanced course be later pursued it is believed that the interests of sound engineering education will be materially promoted.

IN GENERAL.

Harry I. Schenck and Harry J. Williams have formed a partnership for the practice of architecture under the firm name of Schenck & Williams. Offices, 432 Arcade Building, Dayton, Ohio.



TERRA-COTTA FIGURE
BY WINKLE TERRA-COTTA CO.



DETAIL EXECUTED BY EXCELSIOR TERRA-COTTA CO.
Calvin Kiessling, Architect

The American Academy of Fine Arts in Rome was founded in 1894, and was incorporated by Act of Congress in February, 1905. It provides a post-graduate course of instruction for architects, sculptors, painters and musicians.

The beneficiaries of the Academy are selected annually by competition from advanced students in the different branches of the fine arts in the United States.

The course of study during the prescribed term of three years includes, in addition to residence in Rome, travel in Italy, Sicily, Greece and other countries.

The students are required annually to collaborate in a problem in which the arts of architecture, sculpture and painting are united and also to execute a work, which becomes the property of the Academy.

The work of the students is now being exhibited at the Metropolitan Museum of Art, New York City.



DETAIL BY STANDARD TERRA-COTTA WORKS.
Clinton & Russell, Architects.

Architectural Faience. Competition A.**Subject: A Garden Wall Fountain.****ONE CASH PRIZE ONLY. FIFTY DOLLARS for BEST DESIGN.**
Also MENTIONS.

Competition closes May 31, 1905.

PROGRAMME.

In a brick wall which encloses a small formal garden, at the end of a path, it is desired to place a Wall Fountain which is to be executed in Architectural Faience.

The Fountain, with its embellishments, is to occupy a wall space of not more than one hundred square feet.

The color scheme may be indicated by a key.

Garden Pots and other appropriate accessories may be shown.

Drawings required. Plan and Elevation at a scale of one-half inch to the foot.

Drawings may be rendered at will on a sheet of unmounted white paper, measuring 16 inches by 20 inches.

Each drawing is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with a *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawing is to be delivered at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before May 31, 1905.

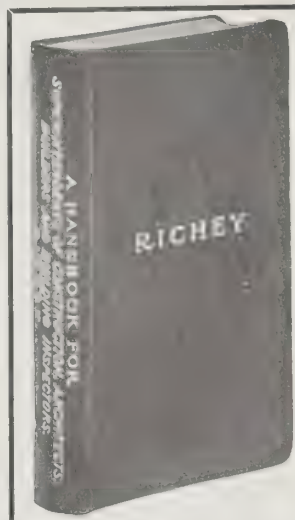
The prize drawing is to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names five cents in stamps.

The designs will be judged by a well-known member of the architectural profession.

Competition open to every one.

WANTED—At once, a first-class architectural draughtsman. Must be capable of designing and detailing. Address Favrot & Livaudais, 839 Gravier Street, New Orleans, La.

WANTED—Two good draughtsmen and designers for general office work. Permanent positions. Address Elmer E. Dunlap, Architect, Columbus, Ind.

**RICHEY**

A Handbook for Superintendents
of Construction, Architects,
Builders and Building Inspectors

By H. G. RICHEY, Superintendent of
Construction U. S. Public Buildings,
Author of "Richey's Guide and
Assistant for Carpenters and Mechan-
ics." 16mo, v+742 pages, 357 fig-
ures. Morocco, \$4.00.

Descriptive circulars upon application.

JOHN WILEY & SONS

43 and 45 East 19th Street, New York City.

.. Competition for a Fireproof House ..

Constructed of Terra-Cotta Hollow Tile Blocks To cost \$10,000

First Prize, \$500**Second Prize, \$200****Third Prize, \$100****PROGRAMME**

THE possibilities in the use of burnt clay in its various forms in our domestic architecture have only begun to be realized.

That dwellings of moderate cost should be made fireproof is not only recognized as desirable, but practicable.

The object of this competition is to call out designs for a house, the walls, floors and partitions of which are to be of terra-cotta hollow tile blocks.

The cost of the house, exclusive of the land, is not to exceed \$10,000. Designs calling for a more expensive house will not be considered.

A detailed statement of costs must accompany each design. This statement is to be typewritten on one side only of a sheet of paper measuring 11 inches x 8 1/2 inches.

A further object of this competition is to encourage a study of the use of burnt clay products of the particular class mentioned, in an artistic as well as practical manner, and to obtain designs which would be appropriate for such materials.

In the selection of blocks for exterior walls, terra-cotta hollow tile fireproofing blocks must be employed, and not architectural terra-cotta blocks.

REQUIREMENTS: The house is supposed to be built in the suburbs of a large city, upon a corner lot, with a frontage of 100 feet towards the south and 150 feet on the side street towards the east. The grade is practically level throughout. The house is to be two stories high with an attic. This attic may be either in the pitch of the roof or a third story may be treated as an attic with a flat roof. On the first floor there is to be a reception room, a library, a dining room, a kitchen and the ordinary allowance for pantries, coat rooms, stairways, etc. The front hall may be treated as desired. In the second story there are to be two bathrooms, four chambers, a sewing room, a den, linen closet, etc. The third story should contain at least two servants' rooms, besides a store-room. Fireplaces, bay windows, seats, etc., are at the option of the designer.

The clear height is to be in first story 10 feet, second story 9 feet, third story optional with the designer. The cellar need not be specially planned, but will have a clear height of 8 feet. Arrangement of piazzas to be left with the designer.

CONSTRUCTION: While the method of construction for walls, floors and partitions is to be determined by the designer, the following suggestions are offered as being practicable and admissible:

First. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the treatment of the faces of the blocks to be appropriate for such materials.

Second. Outside walls may be of hollow tile blocks 8 inches thick, lined on the interior with 4-inch furring tile, the face of the wall to be rough cast or plastered.

Third. The outside walls may be faced with brick, with a backing of 8-inch hollow tile blocks.

Fourth. The outside wall may be built with an outer and inner wall, with an air space of 4 inches between, using in each wall a 4-inch hollow tile. The treatment of the face of such a wall, and the manner of bonding the outer and inner walls, are left to the designer. The plaster finish may be applied direct to the interior surface of such a wall.

If hollow tile blocks are used for facings, any special features in the finish or treatment of their exposed surfaces should be given in a footnote on sheet showing elevations.

For the interior partitions terra-cotta blocks are to be used.

For the floors one of the long span, terra-cotta hollow tile block systems now on the market, which are adapted up to spans of 20 feet without the use of steel beams, or a system which employs terra-cotta hollow tile blocks in connection with light steel construction.

DRAWINGS REQUIRED: On one sheet the front and a side elevation, at a scale of four feet to the inch; also plans of first and second floor, at a scale of eight feet to the inch, and on another sheet details showing clearly the scheme of construction for the exterior walls, the floors and the partitions, together with other details drawn at a scale sufficiently large to show them clearly. Graphic scales to be on all drawings.

The size of each sheet is to be exactly 24 inches by 36 inches. The sheets are not to be mounted.

All drawings are to be made in black line without wash or color. All sections shown are to be crosshatched in such manner as to clearly indicate the material, and the floor plans are to be blocked in solid.

Each set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., on or before May 15, 1905.

The designs will be judged by well-known members of the architectural profession.

In making the award the jury will take into account, first, the fitness of the design in an artistic sense to the materials employed; second, the adaptability of the design as shown by details to the practical constructive requirements of burnt clay; third, the relative excellence of the design.

Carefully made estimates giving relative costs of fireproof and ordinary wood construction for houses built from the designs awarded the three cash prizes will be obtained by the publishers of THE BRICKBUILDER, and given at the time the designs are published.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned, except the prize drawings, may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

For the design placed first in this competition there will be given a prize of \$500.00.

For the design placed second a prize of \$200.00.

For the design placed third a prize of \$100.00.

In the study of this problem, competitors are invited to consult freely with the manufacturers of burnt clay fireproofing or their agents. This competition is open to every one.

THE BRICKBUILDER.

VOL. 14

APRIL 1905

No. 4

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FROM WORK OF EAMES & YOUNG, HALE & MORSE, CALVIN KIESSLING,
LORD & HEWLETT, YORK & SAWYER.

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UNFINISHED CHAPEL, CHURCH OF NUESTRA SENHORA DA VITTORIA,
BATALHA, PORTUGAL.



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THEATER CONSTRUCTION.

ONE of the Boston dailies, in an editorial under the above title, alludes to a scheme which seems to it to be novel for doing away with staircases in theaters, and substituting therefor inclines or ramps leading from the lower to the upper levels. The editorial goes on to state that the English government is intending to build a temporary structure to test the feasibility of the incline for playhouses. The proposition is to have such a structure set on fire with a hundred men inside of it, and to produce as nearly as possible the conditions of a panic in a theater.

This is a very good illustration of the way in which daily papers will sometimes try to deal with a practical subject. Quite aside from the question as to whether or not a hundred men could be found who would be willing to be panic-stricken to order in a blazing shed, it is quite certain that such an experiment would have no bearing on any real solution of the problem, nor is it at all necessary to make such childish attempts.

The ramp is as old as the staircase. Furthermore, it has been used with marked success for many years in a number of theaters. The Nixon Theater at Pittsburg, one of the finest in the country, has a double set of ramps leading from the main floor to the balcony. A theater in Los Angeles takes advantage of the hillside situation and has ramps leading from the front to the balcony, and from the higher level in the rear to the gallery, so that staircases are entirely dispensed with.

With a rise of not over one in twelve, and better, of one in twenty, such ramps are as safe for a crowd as a level passage and are incomparably better than any stairs being devised. The practical difficulty is that they take up so much space it is seldom that property

owners will consent to their use. But there is not the slightest question about their practical utility nor about their being the safest means of communication which could be devised.

No arrangement, however, of either staircases or inclines can avert a panic. There have been repeated instances, like the occasion of the coronation of the Czar at Moscow, when a panic in a crowd on a perfectly level unlimited plain has resulted in large loss of life. The most that can be done is to eliminate as far as possible obscure corners, sharp turns or places of stumbling. All of this is admirably accomplished by the use of inclined planes.

BUILDING PROSPECTS FOR 1905.

BRADSTREET'S makes some very interesting and hopeful predictions for building operations during the current year based upon reports received from one hundred and eight cities and towns of varying size in the United States. These point to an expenditure for new building amounting to four hundred and fifty-five million dollars, a gain of fifteen and seven-tenths per cent over corresponding work in 1904. The percentage of gain is not uniform throughout the country. The West gains twenty-four per cent as against seventeen per cent in the South and ten per cent in the middle Atlantic states; while New England shows a gain of only nine per cent.

Taking these figures and extending them to the entire country a grand aggregate of about six hundred million dollars for building is foreshadowed, of which amount at least three hundred million will go into material. And as the burnt clay products form the basis of nearly all structural work, at least one hundred and fifty million will very likely be expended in these directions.

These figures are certainly very hopeful, but their full import to the architect or builder will be more fully appreciated when we consider the class of structures which go to make up the bulk of the increase.

Six hundred millions expended in cheap flats or speculative residences does not mean a very substantial growth; but the most encouraging feature of the building outlook is the large number of important monumental structures which are being considered. There seems to be far less speculative work than ever before. The jerry builder will always be with us, and his fragments will have to be gathered up as they were in New York the past month. But the list of important, dignified, permanent structures which are planned for the immediate future is most encouraging to all who are interested in good architecture and thorough construction.

Ecclesiastical Architecture.

PAPER II.

BY R. CLIPSTON STURGIS.

IN a previous paper I reviewed very briefly the two aspects of the teaching of the Church which gave us successively the altar type of church, brought to its most perfect architectural expression before the sixteenth century, and the pulpit type, which, developing later and under less favorable architectural circumstances, never reached so full and perfect a development.



HOLY TRINITY, SLOANE SQUARE, LONDON.

A City Church in a Block.

John D. Sedding, Architect.

In the present paper I propose to attempt to show how the modern demand has been for a building which combines many of the essentials of both these ideals; and how far this has been realized in execution. And, because English Gothic has so much association with the church of which the Protestant Episcopal Church in America is a branch, and because this type, pliable as it is, lends itself readily to the majority of situations and surroundings in this country, I propose to confine myself largely to the considerations of the problem as it has been solved on the lines of English Gothic architectural precedents.

This I do, partly because the field would be too large to cover if I attempted to consider the various aspects of Renaissance church work, and partly because I hope that what I have to say may approve itself as true, whether expressed in the language of the fifteenth, the eighteenth or the twentieth century.

I will take first the needs of a parish church, both in a city and in the country, then of a cathedral church, and then of a college chapel type, and see how the requirements of each, modern as they are, have been met

without losing what was beautiful and essential in the architecture and symbolism of the earlier standards.

Taking first then a city church and presupposing the most difficult conditions that may exist in a city lot, such as would restrict an ordinary house lot, not on a corner, one must, within those limits, give dignity to the altar, some elevation, that it may be readily seen, and good light, which yet shall not be in the eyes of the congregation. There must be ample space for a choir who are to lead the service of a large number of people, perhaps six or eight hundred or more, and dignified space for the clergy, often three or more, and for the bishop when on visitation. This much is the expression of the requirements of the altar type. It must be modified, however, by a distinctly modern requirement; a large proportion of the congregation, especially at the high festivals, receive the sacrament, and it is imperative that there should be not only accommodation for a good number, say twenty to thirty, at the altar rail, but also convenient means of approaching and leaving the chancel with due order and reverence. This means space at the rail, a good central aisle in the choir and opportunity, perhaps in side choir aisles, for those who have received to return without interfering with those coming up.



INTERIOR, HOLY TRINITY.

A Church Seating about 1,000.

The number of the clergy and the number of the choir are both factors in this problem. A number of clergy, often four in the larger London parish churches, simplifies the administration, but makes such frequent changes at the rail that communicants form a continuous line going up and coming down. In such cases it is especially desirable that separate aisles should be available for approaching and leaving the altar. The choir influences the problem in that it is generally (owing largely to the



THE CHURCH AT HOAR CROSS, WITH CENTRAL TOWER.
Bodley & Garner, Architects.

fact that trained boys are not always available) much larger than would be at all necessary if the voices were all first rate and reliable. The large number in the choir necessitates enlarging the chancel or cramping the space which should be reserved for free passage. This often means that the architect is forced to cramp the aisles, owing to the requirements of space for choristers, out of all proportion to the size of the church. In one of the smaller English cathedrals the full choir consists of but fourteen trebles, three altos, four tenors, four basses, the daily services having generally a considerably smaller number.

Before considering the pulpit and nave it will be well to consider the service, so to speak, of the chancel and sanctuary. The choir form in their vestry and lead into the church, followed by the clergy. The vestry for the choir should be therefore so located as to make it convenient for clergy to join the choir, and at the same time the clergy vestry should be so convenient to the chancel as to make a direct entry possible when the choir is not used. This secondary entrance would serve also when the celebrant goes direct to the altar and does not follow the choir on their entry. Beside choir and clergy vestry there should be also the sacristy for vestments, altar hangings, etc. In many churches these would be of simple description and would require little space, but where colored vestments are used by the clergy, and where the altar has frontals and superfrontals and perhaps em-

broidered hangings to serve as reredos, the proper care of these, which must not be folded, requires special consideration.

There are various ways of bringing the choir into church. The simplest and most direct seems to me the best. Many think that a procession is a ceremony by itself, reserved for important occasions, for high festivals; others consider it a part of every service in which the choir joins. The entry into the chancel and the arrangement of the choir stalls will to a certain extent depend on the point of view. There is, however, in each case a special need to be met.

The people now demand an intimate share in the services of the Church which was not considered in the middle ages. This has already been touched upon, speaking of the congregation communicating. For the same reason a structural rood in a parish church is not only unnecessary, for the division between clergy and people is not now so strongly emphasized, but is actually objectionable as cutting off the choir and more especially the altar from view. The significance of the rood however remains, and the rood beam meets modern requirements and at the same time preserves the symbolic significance of the cross as the means of access to the altar. With the rood beam one often finds a low solid barrier which serves to mark in dignified manner the separation between nave and choir and,



INTERIOR, THE CHURCH AT HOAR CROSS.



ST. AUGUSTINE'S, PENDLEBURY. Bodley & Garner, Architects.
A Church in a Manufacturing Town, but standing free.



in part, helps to screen the boys who, one regrets to say, are not always the edifying sight they should be.

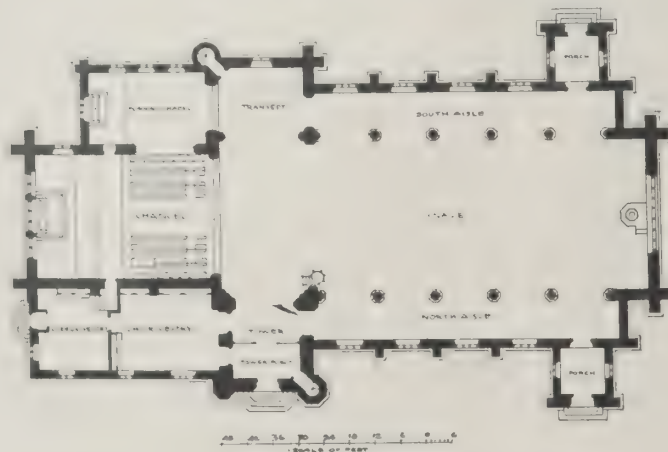
The pulpit, through its over-emphasis in Puritan days, has remained a very important factor in the church, and it is imperative that in a good modern church every one should be able to see or at the very least to hear the preacher. However poorly the clergy preach, it

seems to be an accepted fact to-day that preaching has come to stay and must be recognized as an essential part of the service. With this in view much of the study of architects has been put on the question of how to retain the symbolic nave and aisles and yet make a fair auditorium within which all the seats are good. The most practical and most modern solution is to reduce the aisles to a dimension where they serve practically nothing except passageways. Mr. Bodley's St. Augustine's and Mr. Cram's All Saints', Dorchester, are such plans, although Mr. Bodley's church in its proportion follows more nearly the college chapel type.

To obtain the plan outlined above on a city lot means a building largely dependent on clerestory light. Mr. Sedding's church, Holy Trinity, Sloan Square, London, is a good example of a modern city church on such lines, but the sanctuary depends largely for light on its great



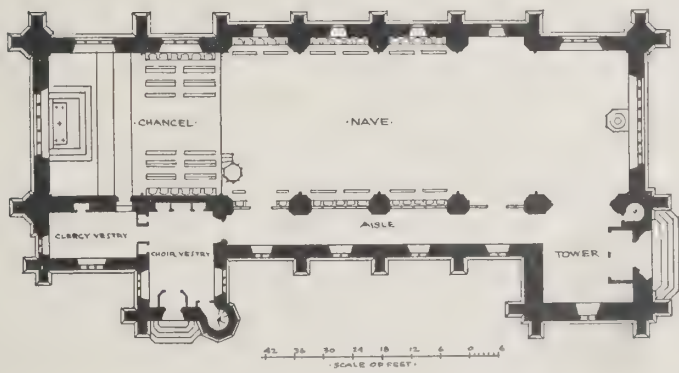
CHRIST CHURCH, NEW HAVEN, CONN.
Henry Vaughan, Architect.



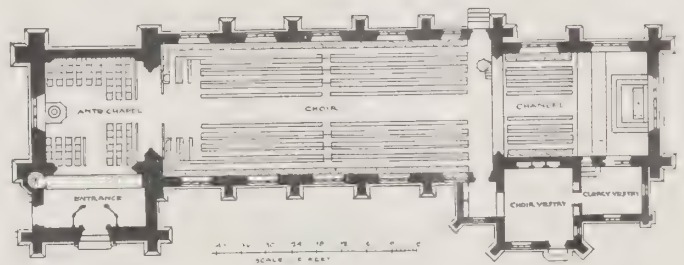
PLAN, CHRIST CHURCH, NEW HAVEN, CONN.



THE CHAPEL, GROTON SCHOOL, GROTON, MASS. Henry Vaughan, Architect.
Seating 150 boys, pew-wise.



PLAN, GROTON SCHOOL CHAPEL.



PLAN, ST PAUL'S SCHOOL CHAPEL.



THE CHAPEL AT ST PAUL'S SCHOOL, CONCORD, N. H. Henry Vaughan, Architect.
Seating some 300 boys, choir-wise.

east window, which is trying for the congregation. Few would consider the church very close to the lines of English Gothic work. Sedding himself I believe described its

with ten-story buildings, in the country they seem entirely in place. In the city then the lofty nave is the one great note of dignity of the church which speaks to its own



ALL SAINTS' CHURCH, ASHMONT, MASS.
A Church in a Suburb, Standing in its own Grounds.
Cram, Goodhue & Ferguson, Architects.

style as "Sedding debased"; none the less it is a fine logical expression of modern church needs.

With the country parish church it is in many respects a simpler question, as one has the freedom that comes from more space and less restriction in light, otherwise the lines for the development of the plan remain the same; the chief difference being that whereas the type dependent on the clerestory for light presupposes height of nave, this is neither required nor advisable in the country; and where city surroundings make tower and spires out of place, for they may weakly challenge comparison

congregation, to those within; in the country the tower or spire soaring above the low lying nave carries a wider message to all who have eyes to see, or ears to hear,



CHAPEL OF THE UNIVERSITY OF THE SOUTH, SEWANEE, TENN.
A College Chapel with detached Tower.
Cram, Goodhue & Ferguson, Architects.



INTERIOR, CHAPEL AT SEWANEE, TENN.



EMANUEL CHURCH, NEWPORT, R. I.
A Church in a small City but having the freedom of the Country.
Cram, Goodhue & Ferguson, Architects.



INTERIOR, EMANUEL CHURCH, NEWPORT R. I.

Cram, Goodhue & Ferguson, Architects.



INTERIOR, ALL SAINTS' CHURCH, ASHMONT, MASS.



CATHEDRAL AT DENVER, COLO. Cram, Goodhue & Ferguson, Architects.

one may add, for the bells which are so beautiful in the open country may prove rather a nuisance than a pleasure in a place where every added sound is an added burden.

In the churches illustrated here we have reasonable modern developments from the older types, not copies, but practical solutions of present-day problems done in the light of older knowledge.

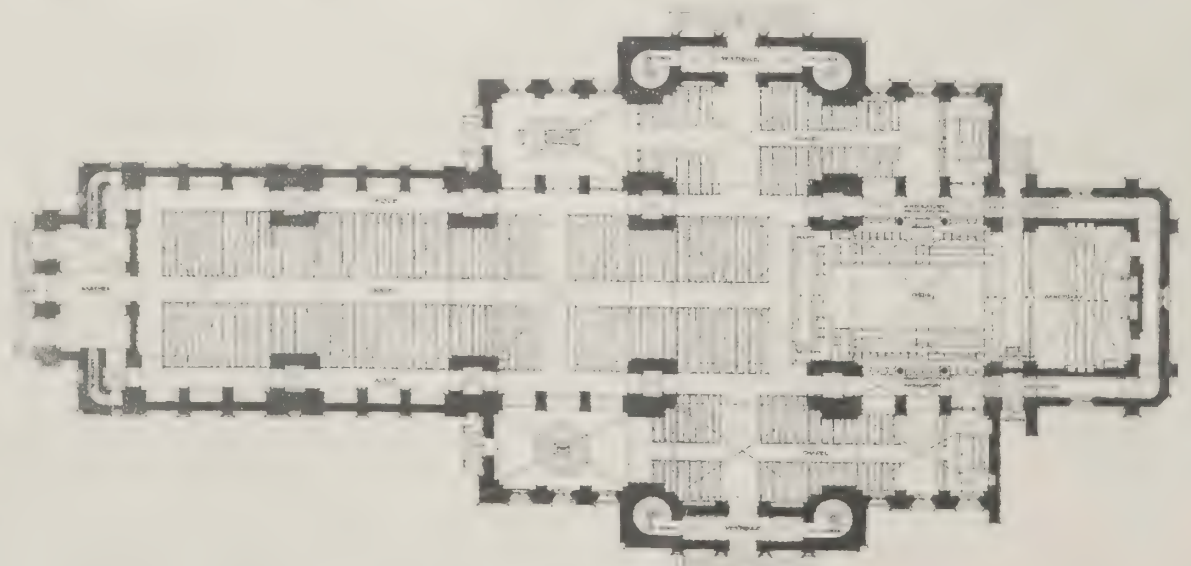
Somewhat different from this is the problem of the cathedral. This, as a modern problem, is still in its infancy. Here, in this country, we do not feel altogether sure that we want cathedrals, we do not feel quite sure what to do with them when we have them. Personally I believe most strongly that we do need them and that they have a great work to perform.

As compared with the parish church the cathedral is a building designed for many services, attended generally by few worshipers. Here daily and oftentimes a day is the sacrifice of prayer and thanksgiving offered for the people. It matters little whether few or many are present at the services, it matters much that the service should be rendered. This, then, is the chief office of the cathedral, — to make a continuous daily offering for the people. The scoffer says, "hiring

some one to pray for you." That is, in truth, the danger, and the condition to which at times such service has degenerated; but, nevertheless, there is an uplifting thought that underlies the act and makes it reverent and beautiful, and there are few who would not be helped by the knowledge that at such a time God is being served in the appointed way in His church.

To meet this especial need the cathedral of modern times is built. If it were only this, a mere choir would serve the purpose; but it must at times accommodate great crowds, and thus the great size is justified. The con-

sequent impressiveness tells not merely when a great congregation throngs the nave, but also when through the empty nave and the dim mystery of vast spaces the voices of the choir are heard. The cathedral at Albany is one of the early attempts and is hardly more than an effort to reproduce the past. The Cathedral of St. John the Divine in New York is hardly far enough advanced as yet to judge; but as with the parish church, so with the cathedral, the solution will surely come. The cathedral at Denver is practically a very large modern parish church, thoroughly planned and equipped for a service with a fine ritual; but it is not along the lines which seem to me to make the demarcation between the parish church and the cathedral. It is evident that the chief difference in the requirements would be a



PLAN OF THE CATHEDRAL AT DENVER, COLO.



SOUTH ELEVATION OF THE CATHEDRAL AT MANILA, P. I.
Following the lines of the Spanish Mission Churches.
Sturgis & Barton, Architects.

more complete separation of choir and nave and a freer use of heavy piers and columns, which in a building too big to be filled anyway by a single voice need not be designed as an auditorium. As, however, a very large number should be within hearing of the preacher, the enlargement of the crossing, giving such space for example as under the dome in St. Paul's in London, may appear to be the right direction in which to develop. Some suggestion of this is given in the little cathedral for Manila, hardly more than parish church in size, but planned in part on the cathedral idea.

The last type to be considered is that of the college chapel, which, as I have already said, is but a large choir. Planned originally for orders or for colleges, it is primarily intended for and built to accommodate those who are within the screen. A community, whether of church or lay students or fellows, would form this congregation, beyond the screen there is no need except for the occasional outsider. Many beautiful old examples exist, and the type has been used almost without modification for college chapels, for which purpose it is as fitted now as it ever was. Henry Vaughan's beautiful chapel at St. Paul's is an example of this, as is also the chapel at Groton, which, however, has the seats arranged pew-wise instead of choir-wise. This, while a great loss to the beauty of the interior, has the advantage of facing all the seats toward the altar and is suggestive of what might be done with this type for ordinary parish purposes. The college chapel at Sewanee has a tower, well removed, which not only avoids conflict with the lines of the chapel, but actually helps them.

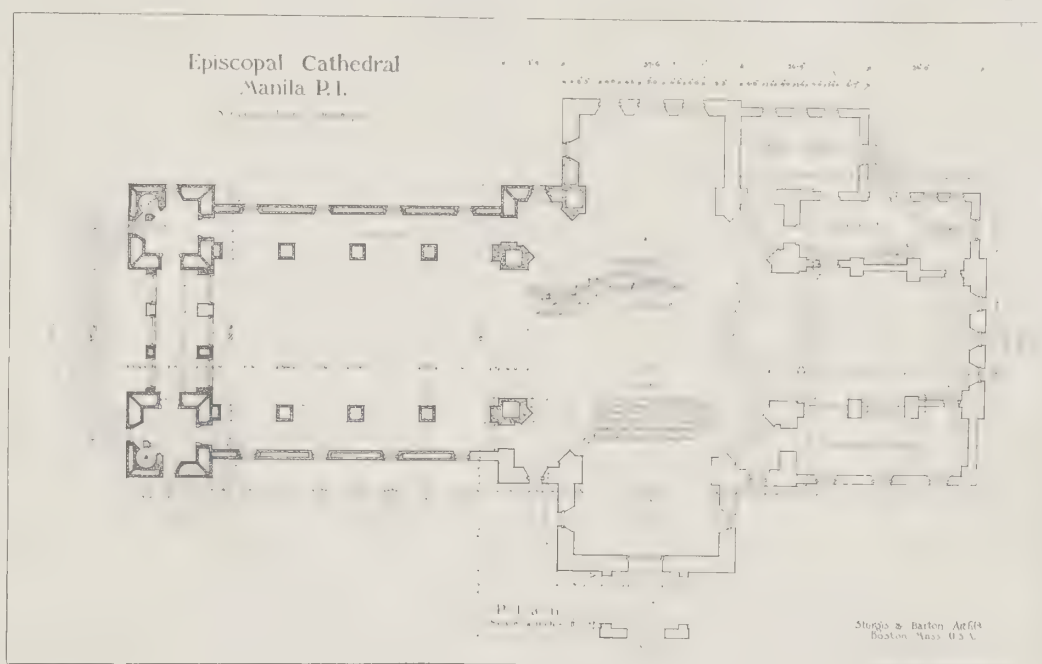
Such is the motive of the church by Bodley at Pendlebury, which is a great choir, with the proportions and character of a choir. Although the exterior gives no

suggestion of aisles, on the interior, it is practically a series of internal buttresses pierced to form an aisle, and to a certain extent suggestive of the triple nave and aisles. One loses somewhat of the symbolism and much of the mystery of the interior, but the type has the advantage of great simplicity.

The tower never seems to be a component part of the college chapel type as it does of the parish church. Even when treated as at Pendlebury as an entirely independent feature, it is obliged to assert its height as against the high ridge line of the chapel. At St. Paul's it is quite overpowered by the chapel, and even at Groton, where the tower is freer and higher in proportion, it

fails of the full effect which such a noble tower should have, because it has not the contrast with a long and low church to enhance the value of its rising lines.

With church architecture, given a clear knowledge of



PLAN OF THE CATHEDRAL AT MANILA, P. I.
With large seating Capacity in the Crossing.

the problem, what the structure is intended for, and what purpose it is to serve, and an humble and reverent knowledge of the great work that has been done in the past, the outcome must be good. But without this knowledge it is useless to think that a few photographs and a talk with the rector will enable any architect to build a church. No period of architectural activity is more difficult to understand and assimilate than the closing century of Gothic work. It is impossible to reproduce it, for it was the product of conditions which no longer exist, and one would not want to reproduce it if one could. But that one can absorb the spirit which produced it and work in that spirit to meet modern requirements is amply proved by the work of a very small group of men. If these men have done it, others can also, and I believe we shall see in the future a standard of church architecture that may honorably hold its own with the best mediæval work.

The "Village Block" Series.

ARTICLE III.

BY HUGH M. G. GARDEN.

IT is to be remembered that a village block of six stores with a second story of offices is not the most important building in the village. It must be conceded that the proposition to house six stores and some offices in a building two stories high cannot logically be worked out to a conclusion that will in any way compete, for architectural prominence, with the theater (or, as it is usually called, the "opera house"), the town hall, the county courthouse or the various churches of our imaginary village. Whatever our aspirations for picturesqueness and for architectural display, we cannot, out of these simple requirements, construct anything very magnificent or imposing without adding some of the functions of the more imposing structures of the community.

We can, however, if we are willing to defer the gratification of our aspirations, without loss of interest indulge in the highly fascinating study of what *can* be made out of these simple requirements.

It is evident that besides the important structures, the accents in the completed picture of our village, there must be many less imposing, less important buildings. These form the half-tones of the picture against which the accents stand out as high lights. They form the background and the connecting links which complete the pictures of the streets and lead the eye from one accent to the next. They comprise the smaller business blocks, the houses, the smaller hotels, the livery stables, the warehouses and the host of other minor buildings of private and domestic function, and in their quieter, simpler way each has its own interest and meaning. It is in this way that I have chosen to consider my village block. I have placed it as the connecting link between the town hall and the opera house, facing the courthouse square, from the steps of which building I have taken my view in making the perspective.

The problem given was a block to contain six stores on a lot 200 feet in width, with living apartments for the shopkeepers and their families in connection; these to be located either on the first or second stories. To locate them on the second story would be inconvenient for the shopkeeper, the members of whose family frequently assist as clerks, and in combining their domestic and business duties would find the stairs a hardship. It would also be a sacrifice of valuable renting space to a low rental purpose. The second story on the courthouse square is always in demand for the offices of lawyers, doctors, real estate men, and such. On the other hand the center of the block back from the streets is, in the average small town or village, never so precious but that it may be given up to tumble-down shanties, barns and vacant yards. Why not then devote it to residence purposes if it can be made fit for the shopkeepers to live upon and can at the same time give them the desired direct connection with their stores? It is safe to assume that in a county seat or indeed in any fair sized village the street surrounding the courthouse square or park, as well as the streets on the square itself, will be devoted to business. I have therefore assumed as a site for my building an inside lot 200 feet in width running through from the square to the

next parallel street, a distance of 350 feet. I have placed a store building on each street with six stores in each building. Four of the stores in each block are provided with living apartments, since not every man who wishes to rent a store will also wish a house in connection, and four out of six seems a generous proportion. The center of the block is designed as a small park or court with grass and trees, and the dwellings are arranged as small two-story houses facing upon this park. The entrances to the court for pedestrians are by passageways at each end of the store building, and for vehicles through the public alleys. Each has its separate porch, entrance hall, living and dining rooms, kitchen and pantry on the first floor, and on the second floor three bedrooms and a bath. In addition each has a service yard enclosed in a brick wall and back door and basement entrance in the yard.

The stores measure 26 x 60 feet, and are provided with basement stairs and back doors opening on to shipping platforms from which the delivery wagons can be loaded. These platforms are in paved courts between the houses and are reached from the alley, which arrangement eliminates the nuisance of delivery wagons on the main streets.

The entrance to the offices is located in the center of each block, and a sufficient variety is shown in the arrangement of offices to suit almost any need. In addition the removal of partitions and rearrangement is of course possible.

In design the building relies for its effect on the expression of its functions. In a village something may be and should be conceded to picturesqueness. A more rigid adherence to the commercial aspect of the problem might eliminate the sloping roof and the subdivisions of the sash, but even these might be spared without actual disaster to the design.

The arched store fronts are another matter; but when it is considered that these arches occupy almost the full width and height of each store it will, I think, be conceded that picturesqueness has not claimed too much.

The scheme of materials is, of course, brick, terracotta, a roof of tiles and the usual steel beams and terracotta blocks for floors and partitions.

PROGRAM.

The problem is A Village Block which is to comprise six shops on first floor front. The building is to have two stories and an attic, and the living apartments for family of each shopkeeper are to be located in rear of first floor and in upper stories.

The block is supposed to stand on the public square of the town and is to have a frontage of 180 feet and a depth of 150 feet.

Separate entrances to upper floors of each apartment should be provided for in the front of the building.

Each design should indicate the arrangement of plan, also in point of architectural style the sort of thing that would be particularly appropriate for the section of the country in which the building is to be located.

The materials are to be, so far as the exterior is concerned, burnt clay in some of its forms.

The problem is presented with the idea of obtaining designs of character at a minimum cost.

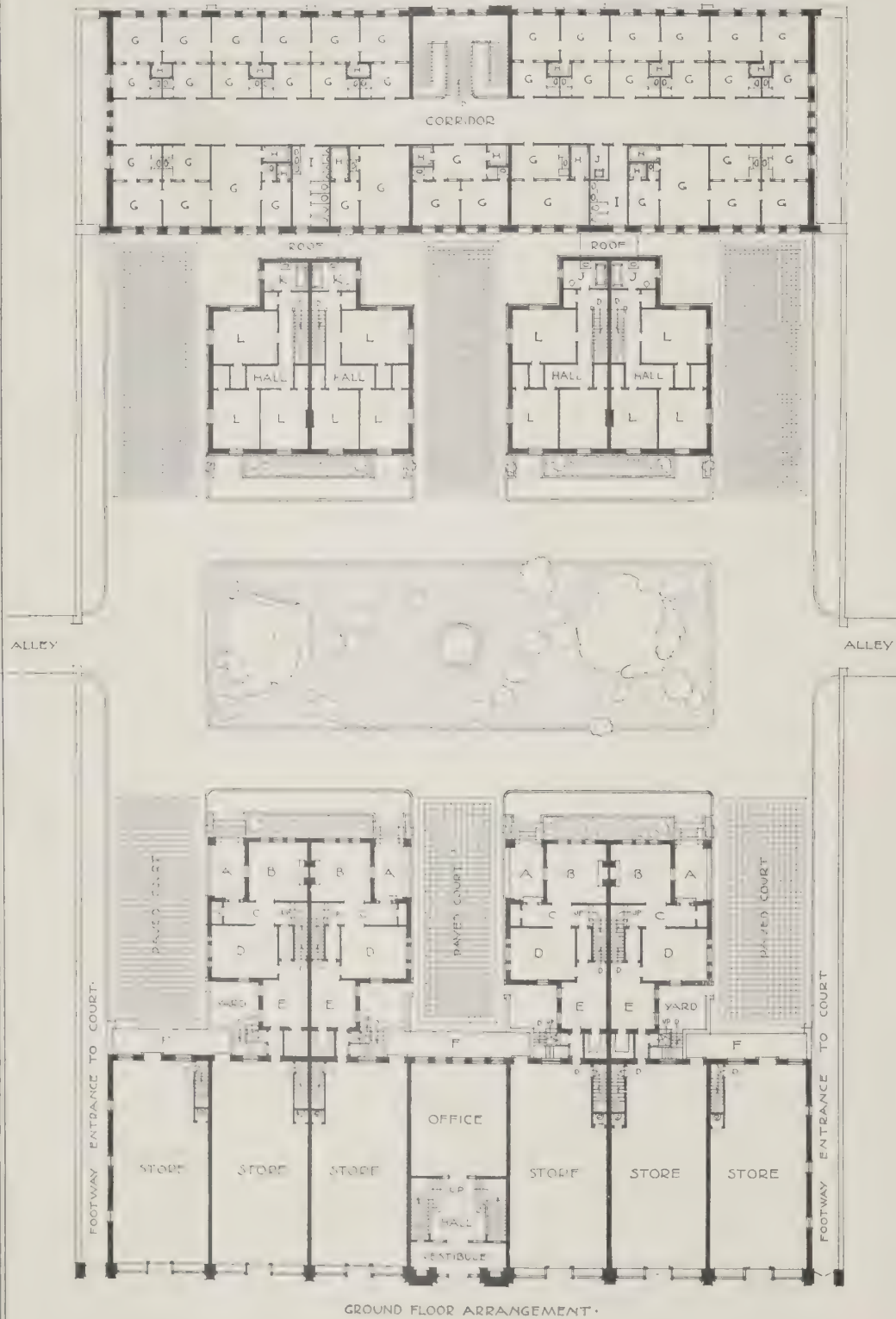


A VILLAGE BLOCK. HUGH M. G. GARDEN, ARCHITECT.

G OFFICE
H VAULT
I PUBLIC TOILET

UPPER HALF OF PLAN SHOWS
SECOND STORY ARRANGEMENT.
LOWER HALF OF PLAN SHOWS
FIRST STORY ARRANGEMENT.

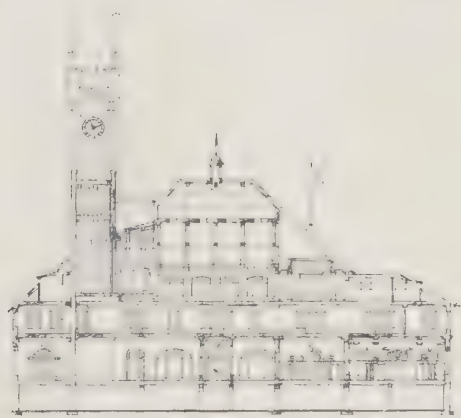
J JANITOR'S CLOSET
K BATH ROOM
L BED ROOM



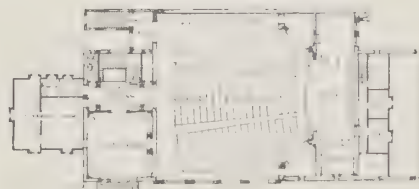
A PORCH
B LIVING ROOM
C HALL

- A VILLAGE BLOCK -
HUGH M. G. GARDEN ARCHITECT

D DINING ROOM
E KITCHEN
F SHIPPING PLATFORM



LONGITUDINAL SECTION



FIRST FLOOR PLAN

SCALE 1/4" = 1 FT.

THIRD FLOOR PLAN

SILVER MEDAL DESIGN, SUBMITTED BY HARRY S. WATERBURY IN THE COMPETITION HELD BY THE ARCHITECTURAL LEAGUE OF NEW YORK, FOR A VILLAGE BLOCK.

Boston Brickwork. III.

RECENT RESIDENTIAL WORK. — CONTINUED.

THE closing decade of the last century was marked by the great development of the tracts beyond West Chester Park, as Massachusetts Avenue was formerly called. The Back Bay, overcrowded, had to expand beyond the limits of the original plots. Society, always conservative, refused to venture into the "Fens." The tradition of the delights of a residence "on the water side of Beacon Street," immortalized by Oliver Wendell



37. DETAIL, HOUSE, BAY STATE ROAD.
Little & Browne, Architects.

Holmes, was strong in the minds of the prospective home-builders of Boston. A street was laid out following the shore along the upper waters of the Charles River basin which, under the name of Bay State Road, met with immediate popularity. No dreams of the noble water fronts of Hamburg or Paris clouded the brains of the hard-headed designers of the newer Back Bay. To match exactly the conditions of old Beacon Street, even with its sea wall and squalid rear alley, was their highest ambition. And so the houses stand with façades fronting on a street sixty feet in width, while their unsightly backs are visible across the wide river from a long stretch of what will soon become a noble parkway.

With old Beacon Street conditions existing in advance it is not surprising that old Boston architecture, or lack of architecture, should be the keynote of the general design, and that the so-called "Colonial" expression should be regarded as of paramount importance; but considering the era and the general condition of architectural affairs, the architecture of Bay State Road, as a whole, cannot be considered eminently successful. The city atlas of 1890 shows, beside the original block of speckled brick houses built by Chadwick & Stillings, only one house, that of Mr. Arthur Little, on the entire street. The work on Bay State Road was, therefore, entirely con-

structed during a period of high architectural development. And yet it must be conceded that no actual fault can be found with the designs; with a few exceptions they are correct, dignified and restrained; Bostonese from grass course to cornice, but lacking the aspiration, spirit and verve which are needed to make architecture a living art.

The first dwelling on Bay State Road, beyond Raleigh Street, was the red brick, very Colonial house built by Arthur Little, the architect, for his own occupancy, and it has not been exceeded in interest by any subsequent structure. The window treatment, with small panes and green blinds, is charming and the entire conception is a delightful version of the artist's house (Nos. 37, 38 and 43). The city is indebted to Little & Browne for the tall house in buff brick and white marble on the easterly corner, opposite (Nos. 39 and 40), which recalls some of the old London work of the Georgian era. The details of this house, both in marble and wrought iron, are exquisite and the blinds are an effective feature. Next to Mr. Little's house are the two houses built by E. M. Wheelwright (Wheelwright & Haven), the one at the left, we believe, for his own occupancy (shown in No. 43). These have very pleasing fronts in water-struck brick and white marble. Next beyond is a very attractive three-storied house by F. Manton Wakefield, with



38. DETAIL, HOUSE, BAY STATE ROAD.
Little & Browne, Architects.

good detail and pleasant proportion and not Colonial (No. 41). This is followed by two more, the first tall and rather French in feeling, the next lower and Colonial (No. 42). Nos. 47 and 48 are by Chapman & Frazer, and possess in full the homelike quality for which the work of this firm is always noted, while at the same time the details are full of delicacy and refinement.

Beyond these two houses, Boston Colonial holds



39. HOUSE, BAY STATE ROAD AND RALEIGH ST.
Little & Browne, Architects.

49



40. DETAIL, HOUSE, BAY STATE ROAD AND RALEIGH ST.
Little & Browne, Architects.

40



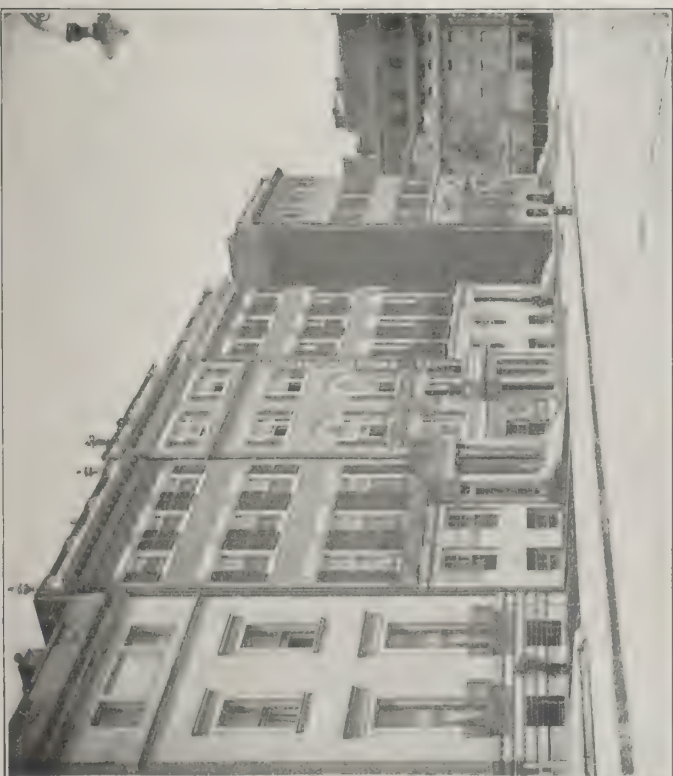
41. HOUSE, BAY STATE ROAD.
F. Manton Wakefield, Architect.

#63. F. M. Manton

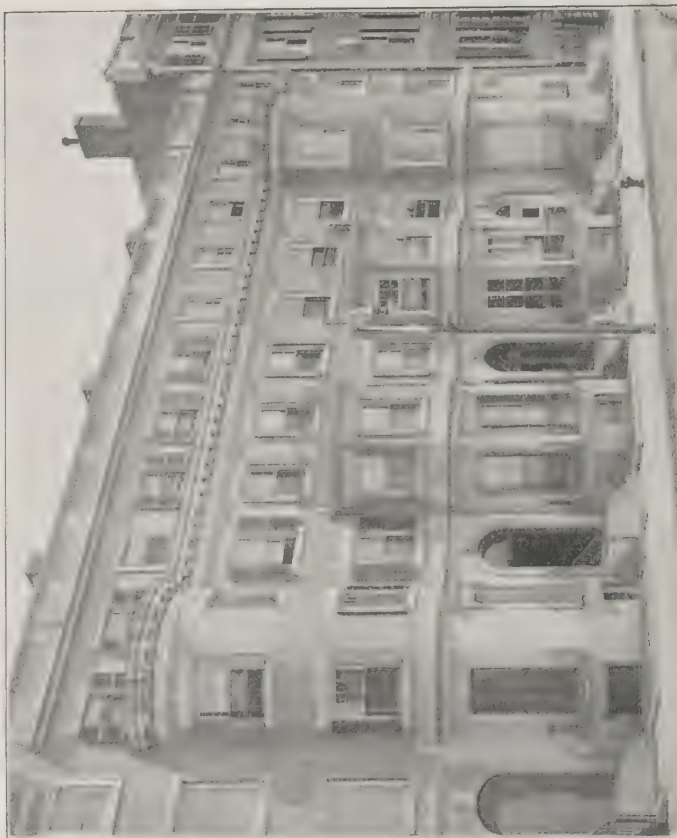


42. HOUSE, BAY STATE ROAD.

#65



44. HOUSES, BAY STATE ROAD.
Center one by Little & Browne, others by Winslow & Bigelow.



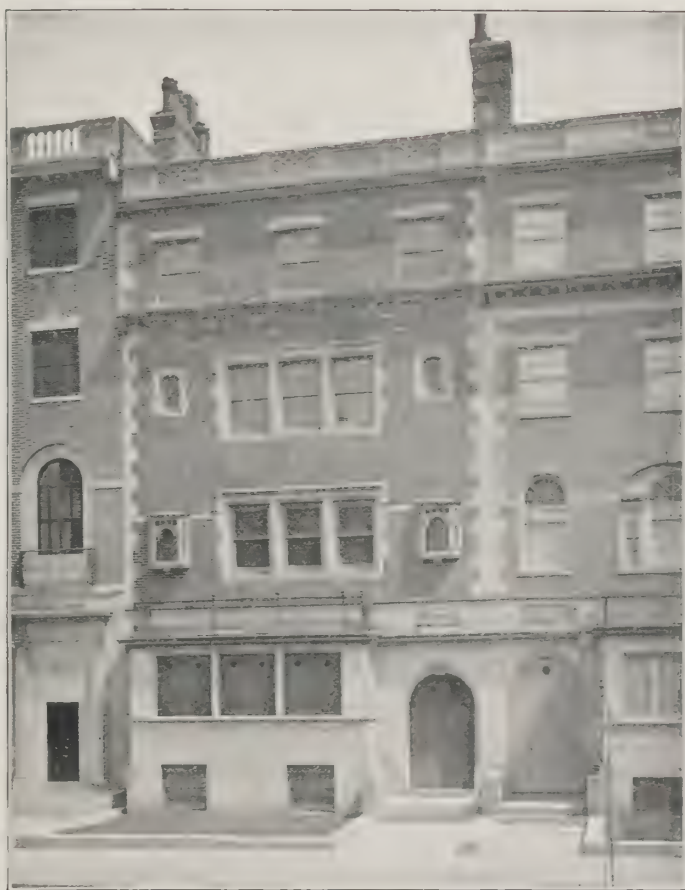
46. HOUSES, BAY STATE ROAD.
E. M. A. Machado, Architect.



43. HOUSES, BAY STATE ROAD.
Homes of E. M. Wheelwright and Arthur Little, Architects.



45. HOUSES, BAY STATE ROAD.
Persistence of "Colonial" Type.



47. HOUSE, BAY STATE ROAD.
Chapman & Frazer, Architects.



48. HOUSES, BAY STATE ROAD.
One at left by Chapman & Frazer.



49. HOUSES, BAY STATE ROAD.



50. HOUSES, BAY STATE ROAD.

almost undisputed sway for the entire length of the street. No. 44 shows five houses, all by Winslow & Bigelow, except the central one, which is by Little & Browne, and is slightly higher than the others. The house to the right of this was built by Mr. Winslow for his own occupancy, and, taken in connection with Mr. Little's and Mr. Wheelwright's houses on the same street, appears to indicate a decided personal preference for houses of this type among Boston architects. No. 45 shows three more good Colonial houses, some having details of Salem origin, and all cheerful and homelike. No. 49 shows French influence and has an iron fence and marquise. Nos. 50 and 51 have central bay windows and rather low stoops. The former adjoins the Weld house, by Peters & Rice, already illustrated in *THE BRICKBUILDER*. The latter is by James Mulcahey. The block shown in No. 46 was built for the market from



51. HOUSES, BAY STATE ROAD.

designs by E. M. A. Machado, and is a very attractive row, in brown Roman brick and light sandstone.

While the present and the preceding articles do not entirely cover the scope of residential work in the city proper, they probably give a fair impression of the field, and show tolerably well the general trend of architectural thought during the last decade. At the present time a rather slight French influence is being felt, but it is scarcely marked enough to be taken as an indication of what the future will produce.

THE idea that the necessity for fireproof construction can be measured by the height of the building dies very hard. Our wise legislators continue to assume they have prescribed the full duty of man when he is allowed to build almost anything he pleases up to a certain height. As a matter of fact, all the great conflagrations, without exception, have started among or been spread by low buildings, not even as high as 50 feet.

Revision of the Building Laws of Philadelphia.

A LITTLE over a year ago a revision of the building laws of the city of Philadelphia was brought about by the action of the insurance companies in adding what they termed a "Pink slip" to all the policies on properties within certain prescribed limits called the "conflagration district," and in other parts of the city exposed to great fire hazard. The property holders through their trade organizations were instantly up in arms against the alleged injustice of the increase. In reply the insurance companies pointed out that owing to the absence in the building laws of provision against certain forms of construction, notably wooden interior construction of large buildings such as stores, hotels and apartment houses, that these forms of buildings had increased to such an extent as to so greatly increase the fire hazard in certain sections, that it was necessary to increase the premiums to cover the risk. After ample discussion of the subject, a committee was appointed to prepare an amendment to the building laws which would provide against the evils of which the insurance companies had complained.

The revision of the laws of a large city to meet the "conflagration hazard" is probably the first that was ever undertaken with this end solely in view, and it has been the means of directing attention to the building laws of other cities which are also faulty, and one other large city is now engaged in bringing its laws up to modern requirements.

The principal subjects covered by the revision of the laws were:

A classification of the different kinds of building construction into the first, second, third and fourth classes, and the restriction of areas and enclosing of hatchways and stairways and the limitation of the height of combustible buildings.

Buildings of the first class were to include all buildings which are of what is generally known as "fireproof or non-combustible construction."

Buildings of the second class were to include all buildings of the type known as "slow-burning construction," with heavy girders and beams spaced far apart and floored with planks not less than three inches in thickness.

Buildings of the third class were to include all buildings of joist construction.

Buildings of the fourth class were to include all other buildings not included in the first, second and third class.

The growth of large hotels and apartment houses in certain residence districts having joist construction led the committee to provide that apartment houses, hotels and tenement houses, schools, etc., which exceeded four stories in height, should be of fireproof construction. All hospitals and sanitariums exceeding two stories in height should also be of fireproof construction.

In the buildings of the second class or slow-burning construction, to be used for stores or factory purposes, the limit of height was placed at eighty-five feet.

The committee had in subcommittee fixed this height

at sixty-five feet, but the textile manufacturers argued that they would be driven outside of the city limits if this height was adopted, and the provision was therefore made for six stories, or eighty-five feet in height.

The height of the non-fireproof buildings having been fixed, attention was next directed to areas of all buildings.

The restriction of areas was made to apply to fireproof as well as slow-burning construction. In fireproof construction, the limit was made twenty-five thousand square feet on any floor, with provision for increasing this area on the ground floor, if an approved system of automatic sprinklers was installed in the entire building.

The specification for buildings of the first class was made rigid and requires that all ironwork shall be fully protected against fire and external changes of the atmosphere by a covering of brick, terra-cotta, tile or other approved fireproofing, completely enveloping the structural members. Around external columns the fireproofing, if of brick shall not be less than eight inches, and if of hollow tile not less than six inches, with two sets of air spaces.

Interior columns and girders shall have not less than three inches of fire-resisting covering, with two inches covering for the webs of girders and for the floor beams.

It will be noticed that the new law provided for a greatly increased thickness of covering for the fireproofing on the structural members, and also that the law was enacted before the occurrence of the Baltimore fire, where the ordinary covering of one inch and one and a half inches was proven to be so inadequate.

Rust proofing was provided for in the requirement that all built sections of girders or columns inaccessible after erection should be filled with Portland cement concrete.

All floor systems of filling are required to have stood actual tests of three times their allowed loading, with a maximum span of eight (8) feet for arches of brick, terra-cotta, concrete or any patent floor, excepting reinforced concrete or heterogeneous systems if their depth is three-fifths of an inch per foot of span, with a further provision that no arch should have a rise less than one and one-fourth inches per foot of span.

In the revised law the placing of pipes, conduits, mains for heat, light and water, inside the covering of columns, was expressly forbidden, and the experience of the Baltimore fire proved that this was a wise restriction.

In buildings of the second class the undivided area was restricted to fifteen thousand (15,000) square feet, and in buildings of the third class or joist construction to five thousand (5,000) square feet, with the privilege of increasing this area to seventy-five hundred (7,500) square feet, if the floor planks are not less than two inches thick. It will be noticed that the "slow-burning construction" building permits twice or three times the floor areas of the joist construction, depending upon the thickness of the plank flooring in the third-class building.

One of the greatest gains made in this law was the positive restriction placed upon open stairways, elevators and hatchway, chute or vent openings in all buildings other

than fireproof structures for office purposes only, except those under five thousand (5,000) square feet in area.

The insurance engineers have been advocating for years the enclosing of the necessary openings in floors by fireproof partitions, and this law is the first one to provide for it. It will be noticed that even in fireproof buildings, with the single exception of office buildings, that this provision applies.

Another provision of this law was the prohibiting of wooden ceilings and wooden studs for furring and partitions and wooden lath. The elimination of wooden lath, studs and ceiling was a great step away from tinder-box construction.

The Philadelphia law contains an admirable provision for what are known as "tower fire escapes," which are required of all buildings of the first, second or third classes which are used for schoolhouses, tenement houses, flat houses, stores, offices, factories, etc., and the number varies with the class of buildings.

The tower fire escapes do not communicate with the building, but are only reached by means of a balcony on the outer wall. They are required to have large openings on each floor, to prevent the accumulation of smoke.

In the framing of this law the committee was compelled to adopt a very conservative course. The provisions and restrictions are not by any means ideal, but had they been very radical, the large property interests might have caused the defeat of the whole revision in the State Legislature. The restriction in the matter of areas is not as great as it should have been, and had joist construction for all but dwelling houses been eliminated it would have been a great gain.

The possibility of the revision of existing laws so easily proved in Philadelphia, encouraged the national fire insurance associations to begin a work of education in other cities, and its good efforts are beginning to bear fruit.

There is really no reason why the building laws of large cities should differ to any marked extent, as was pointed out in the article on the "Structural Design of Buildings" in the December issue; and if out of Mr. Schneider's efforts, and the efforts of the Philadelphia revision committee, and the national insurance societies a uniform building code can be written, a higher standard of construction will follow, which will cause us to wonder why it required so much effort to bring about what was so obviously necessary.

One immediate effect of the Baltimore fire was the prompt recognition of the "conflagration hazard" in cities, which had not been fully appreciated before, and also, in the case of Baltimore at least, of the necessity of building a city according to some sensible system, which it is to be hoped will be heeded by other cities. Narrow and crooked streets lined with high combustible buildings furnish the conditions requisite for great conflagrations.

The Baltimore fire furnished another lesson in the matter of fireproof coverings. The often inadequate and careless work shown at critical points in the fireproof coverings of important buildings, which failed and exposed the ironwork, proved that Philadelphia has been none too exacting in requiring that thicker and better covering be provided for protecting the ironwork of fireproof buildings.

Editorial Comment and Selected Miscellany

BUILDING COLLAPSE IN NEW YORK.



DETAIL BY A. A. RITCHER,
ARCHITECT.
Excelsior Terra-Cotta Co.,
Makers.

ANOTHER building collapse was added to the season's record for such casualties on April 5, when about five hundred pounds of concrete fireproofing crashed through the five floors of a thirteen-story apartment hotel in course of construction in New York.

The floors of the building had been laid with concrete. It was claimed that recent rains had softened the concrete to an unusual extent, causing it to be "soggy," to quote the newspaper expression. As cement is a product which is supposed to harden under water, the only inference is that the quality of the mixture was decidedly poor, or else, which was quite as likely, that it had been frozen

flooring in the seventh story gave way while a workman was standing upon it, and crashed down through all of the stories to the third.



DETAIL BY CONKLING-ARMSTRONG TERRA-COTTA CO.
D. H. Burnham & Co., Architects.

Much more serious than the foregoing, however, was the recent collapse of twenty-three apartment buildings in the upper part of New York. These were not all in one group, but were scattered around various portions of the new district which has sprung up with the extension of rapid transit towards the north of Manhattan.

The fact that, as reported by the commission of experts who investigated, these buildings were erected without proper supervision, under inefficient inspection, and by incompetent contractors suggests a familiar tale.



FRIEZE FOR A BATHROOM, HOUSE, NEW YORK CITY.
Painted in Colored Mat Glaze. Executed in Faience by the Rookwood Pottery Co.



DETAIL EXECUTED BY NEW YORK ARCHITECTURAL TERRA-COTTA CO.

before being set and the rain had simply washed out the ice.

A section of the

In only one case was the architect whose name is on the plans put in charge of the con-



DETAIL BY AMERICAN TERRA-COTTA AND CERAMIC CO.
Jarvis Hunt, Architect.



DETAIL FOR NEW HIPPODROME, NEW YORK CITY.
Atlantic Terra-Cotta Co., Makers.
Frederick Thompson, Architect.



HOSPITAL FOR THE INSANE, MASSILLON, OHIO. Yost & Packard, Architects.
Roofs covered with Celadon "Conosera" Tile.

struction In the application for the permit the builder was ignored entirely. Both the workmanship and the material appear to have been about on a par with the efforts of the notorious Buddensick, who a number of years ago paid in state's prison the penalty of the collapse of some of his wretched constructions, a fate which ought to be meted out to the owners of these collapsed structures, though we are very skeptical of anything being done whatever to secure adequate punishments.

The recommendations of the experts are none of them new. All have a familiar sound, and they are such as are promptly put in evidence after every disaster of this sort. Of course, an architect should be required by law to supervise the construction of his buildings, and, of course, an architect



DETAIL EXECUTED BY PERTH AMBOY TERRA-COTTA CO.
George B. Post & Sons, Architects.

before being allowed to practise should be required to show some evidence of his ability.

The features in the recommendations, however, which are not so often brought to the front are that the bureau of buildings should grant permits only upon plans prepared by registered architects, and that contractors for mason work or structural steel should likewise be licensed, though the full value of such recommendations is considerably nullified by the further suggestion that the coöperation of the recognized organizations in the trades would be of value.

The laws of France hold an architect personally and pecuniarily liable for all structural damages occurring within ten years from date of completion



DETAILS BY ST. LOUIS TERRA-COTTA CO.
Weber & Groves, Architects.



GATE LODGE, FARM, LEXINGTON, KY.
Roofed with American "S" Tile.
Copeland & Dole, Architects.



DETAIL BY BRICK, TERRA-COTTA AND TILE CO.
Wood, Donn & Deming, Architects.

of any building designed by him. This makes a very severe load and imposes an actual burden on the property, for it of necessity implies that the architect shall be continuously employed long after the time when in this country his connection with the work would cease. But we

believe some such arrangement of this sort is bound to come with us.

IN GENERAL.

R. Guastavino Company have removed their New York offices to the Fuller (Flatiron) Building, Madison Sq.

Frederick Junius Sterner and George H. Williamson, architects, have become associated for the practice of architecture; offices Jackson Building, Denver, Colo.



GRAPHIC ARTS BUILDING, CHICAGO.
Enameled Terra-Cotta used for entire front
Northwestern Terra-Cotta Co., Makers.
E. R. Krause, Architect.

The firm of Cowell & Love, architects, having dissolved, the business will be continued by Edgar L. Love; office Huntsville, Ala. Manufacturers' samples and catalogues desired.

The plant of the Jewettville Pressed and Paving Brick Company, makers of a stiff mud red front brick, which is perhaps as well and favorably known as any brick of its kind on the market, has been enlarged to meet an increased demand for its product.



DETAIL BY NEW JERSEY TERRA-COTTA CO.

Robert C. Martin & Son, New York agents for the Blue Ridge Enameled Brick Company, have closed the following new contracts: Fordham Hospital, Raymond F. Almirall, architect; power houses for New York Central Railroad at Yonkers and Port Morris, N. Y., Reed & Stem,

architects. They will also supply their vitrified buff brick for the exterior of these power houses and fourteen new apartment houses for which J. Scharsmith is architect.



TRACTION TERMINAL BUILDING, INDIANAPOLIS, IND.
Built of "Ironclay" Brick
D. H. Burnham & Co., Architects.

WANTED — In an architect's office, New York City, a man of experience and excellent references, capable of superintending construction, figuring and checking, drawing and corresponding. Write stating experience, references and salary required to Tee Square, care "The Brickbuilder."

The Fireproof House Competition CLOSES MAY 15, 1905.

The Programme for this competition was published in THE BRICKBUILDER for January, February and March, 1905.

Architectural Faience. Competition A. Subject: A Garden Wall Fountain.

ONE CASH PRIZE ONLY. FIFTY DOLLARS for BEST DESIGN. Also MENTIONS.

Competition closes May 31, 1905.

PROGRAMME.

In a brick wall which encloses a small formal garden, at the end of a path, it is desired to place a Wall Fountain which is to be executed in Architectural Faience.

The Fountain, with its embellishments, is to occupy a wall space of not more than one hundred square feet.

The color scheme may be indicated by a key.

Garden Pots and other accessories may be shown.

Drawings required. Plan and Elevation at a scale of one-half inch to the foot.

Drawings may be rendered at will on a sheet of unmounted white paper, measuring 16 inches by 20 inches.

Each drawing is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with a *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawing is to be delivered at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before May 31, 1905.

The prize drawing is to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names five cents in stamps.

The designs will be judged by a well-known member of the architectural profession.

Competition open to every one.

THE BRICKBUILDER.

VOL. 14

MAY 1905

No. 5

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FROM WORK OF ANDREWS, JAUQUES & RANTOUL, GEORGE R. DEAN,
HALE & MORSE, W. B. TUBBY & BRO., WILLIAM L. WOOLLETT.

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TOWER OF ST. VINCENT, BELEM. NEAR LISBON, PORTUGAL.



THE BRICKBUILDER.

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FIREPROOF HOUSE COMPETITION.

ARRANGEMENTS are now being made to have the Fireproof House Competition judged in New York City by three well-known architects and a prominent builder of that city. It is hoped that the awards of the jury may be made in season for announcement in THE BRICKBUILDER for June. The Prize and Mention drawings will be published in THE BRICKBUILDER for either June or July.

BUILDING FOR TIME.

THE paper by Mr. Medary in this issue of THE BRICKBUILDER presents an idea in regard to church building which should certainly receive the most careful consideration of all who are interested in that subject. Most of our churches are built either hurriedly, and hence usually imperfectly, or are planned only for the day and take no thought at all for future conditions. It is the usual experience of the architect to be told by his church committee that the church must be so big and must cost no more than so many dollars, quite aside from any question of any possible relation there might be between the two quantities. A church committee is usually so reluctant to leave a structure half completed that it will very often deliberately sacrifice its ideals and consent to an arrangement or plan which it knows is imperfect rather than to maturely consider and adopt the plan or design which it knows is absolutely the best, and then build as much of that as circumstances will to-day allow. The architect is sometimes quite as much to blame for this state of affairs as the church committee, indeed possibly

even more so, for the architect should know better than to induct any committee into a design or plan which he knows is not the ideal. Surely if any problem calls for the very best solution it is that of a church, and yet there is hardly any problem which is more slighted as a rule. Our commercial buildings, which may not survive a generation, can stand haste, and for that matter our churches, if they are poorly built or inefficiently planned, had better be built hastily than wrongly, for that would advance the day when they could be torn down. But such is not the right theory nor the one commonly accepted, and a single, thoroughly well-planned church half completed is of far more value to a community than half a dozen ill-assorted, poorly contrived structures which will have to be torn down in time. The mediæval spirit was the right one. To use a modern phrase, the church architect should hitch his wagon to the stars. It is not his function to give a church what they say they want, so much as to tell them what is really needed, to show them what can be, and to finally give them the thing they really want even though it takes years for them to grow up to it. There are some notable instances scattered throughout the country of religious edifices which have been built just this way, a few of which are cited by Mr. Medary, structures whose whole aspect seems to say we are going to do what we do right, and we will fight it out on this line if it takes a century. It does not follow of course that this is the only way to design a good church building. There come the rare opportunities when a structure can by a master hand be beaten out in one fabric, of which perhaps our best example in this country is Trinity Church, Boston. There is a splendid opportunity in church building if it is treated properly, but it always has taken time, and the worst mistakes have been made by sacrificing to the necessities of the hour and ignoring the great needs of the future. Church architecture is only beginning to be appreciated in this country. The great opportunities have not been in the past, but are coming to us in the future. From all the wealth which is piling up so tremendously in this land of ours the church will surely have its full share. The opportunities will come to the architect for better, for worse. It will be for better if the opportunity is looked at in a large way, if the foundation plans are broad and deep and church building treated as an art rather than the means of gaining a living. It will be for worse if the cost is to be counted at a sacrifice of the ideal, if the business man is to dominate the reverential artist.

Ecclesiastical Architecture.

PAPER III.

BY M. B. MEDARY, JR.

THAT a large amount of money and energy is annually expended in the erection of ecclesiastical buildings which are distinctly bad must be regretfully admitted, but I feel strongly that much of the time and energy which is spent in lamenting this fact could be much more profitably employed in cordially endorsing the good work which has been done. We undoubtedly have some good church buildings, but as a rule they are almost unknown. How much is done by our architectural societies or publications to endorse this good work compared with the volume of criticism heaped upon the bad? Is it any wonder that the laity look upon us as a collection of hypercritical experts, trained in technicalities which cannot interest them at all, when we rarely have anything to say except in finding fault? It is our duty to commend that which is good, and doubly so because one of the common qualities of purity, dignity and fineness of feeling is conservative unpretentiousness, almost exclusiveness, and perhaps the most prominent characteristic of vulgarity is its desire to be seen.

The galleries, the studios, the libraries of the world hold up before us the masterpieces of painting, sculpture, music and literature, and that which is bad is soon for-



CHRIST CHURCH, PHILADELPHIA.

gotten. Let us apply the same principle to our own American architecture. It is perhaps too much to ask that some of the finer work which is being done to-day be given the hearty enthusiastic endorsement which it deserves, but we can at least be generous enough to turn to the work of a generation ago and stamp with the ap-

proval of our profession that work which is a worthy example for future church building committees.

The better examples of our ecclesiastical architecture of the colonial period have often been published and heartily commended, with the result that the public generally knows that certain colonial churches are good,



ST. MARK'S CHURCH, PHILADELPHIA.

perhaps only because they have heard so; but after all that is the way we get our education, and education leads to good work.

In the accompanying illustrations (Christ Church, St. Mark's, Holy Trinity and St. James the Less, all of Philadelphia) I feel the architecture is sound and dignified, and that we as a profession might well encourage the builders of churches by our approval of such existing examples. We hear too much talk of original work; this, combined with constant destructive criticism, produces many of the lamentable failures of to-day; there is time enough for original work and it will come in its time.

The great changes in the styles of Old World architecture came gradually and almost imperceptibly as hundreds of men worked their buildings in the same style, introducing their personality unconsciously, and it was the cumulative effect of their personalities which gave the style its life and gradually changed it.

The fault with most of our work of to-day is the lack of that simple honesty and truth which characterized the work of the middle ages in Europe, due to a desire to build more pretentiously than we can afford; and so long as we deliberately design in a way to make cheap imitations of splendor and richness, when the money available, if honestly and frankly used, would easily build solidly and well without attempting anything more, so long as we try to make others believe we have done something which

we have not truly done and which we could not possibly afford to do, just so long we will meet with failure and worse, for we have built unworthily and have been guilty of the most inexcusable of deceptions, a counterfeit of something we need not have attempted until we could afford to do it honestly and well, something we could



HOLY TRINITY CHURCH, PHILADELPHIA.

have left for our children to do on a foundation prepared by us. How can the church preach honesty, purity and dignity in counterfeits of good workmanship and material, with cheap and garish decorations, hopelessly lacking in the dignity necessary for our majestic ritual?

The church building which has grown up through a number of generations, whose several parts represent the separate efforts of different groups of men, working at different times, but all alike in purpose, whose walls and windows are silent records of local human history, cannot help but have a more powerful influence upon a community than any other type of building. If, then, a plan is conceived in this spirit and developed along the lines of those churches of the middle ages which tell their story from afar, which in their plan and mass and lines alone, empty, without priest or choir, pronounce a benediction on every passer-by whether he cares for it or not, it cannot fail of success.

This has been accomplished in the past and with as great success in the smallest parish church as in the great cathedrals, and it can be so again, and only needs the same honesty of purpose and absolute truth in expression as characterized the church and the craftsmen of the middle ages when bishops were architects and sculptors and painters were builders. We need not copy the work of these men, but let us copy the spirit in which they worked. Unfortunately the average church build-

ing committee selects its architect seemingly unconscious of its responsibility for the result, and the committee is rare indeed which is willing to consider the future as well as the present, proportion the actual amount of work to the funds available and be content to let others do their share later.

The illustrations of St. John's, Lower Merion, Pa., show a partially completed group of church buildings begun in 1896 on this theory.

The original church had been closed for a year and was only reopened on the personal guarantee of one member, who agreed to assume responsibility for all expenses for one year. In the face of so evidently uncertain a future the question of new buildings was raised within the year, and a sketch of the group shown was adopted by the vestry with the intention of building, part by part, until the group should be complete. The scheme was considered impossible by almost all who knew the slender resources of the parish; but notwithstanding this the group, with the exception of the nave, was built within five years, and at present a lady chapel is under consideration. The tower is now used as the church, but the building programme contemplates a nave extending forward from the tower, forming, with the other



INTERIOR, ST. JAMES THE LESS CHURCH.

buildings, three sides of a quadrangle. The stone arch built in the front wall of the tower indicates the position of opening into nave, the wall below being a curtain wall and the porch being temporary.

It is a noteworthy fact that all of the funds for this work came from sources which were not considered in any way when the plan was adopted; and although the several sources were entirely independent of each other, each was largely influenced by a desire to carry out the original scheme.

The nave, the enrichment of the interior, the hang-



ST. JAMES THE LESS CHURCH, PHILADELPHIA.

ings, the vessels of gold and of silver can all wait for the future and help keep alive that human interest without which a church is dead. To stand still is to die, and to be complete is to die. This is as true of a church as of a flower or a human life; and if we are to keep our churches alive we must build in such a way that their interest is ever growing, that each generation leaves its history carved upon the structure and at the same time leaves something for the next to do.

The Washington Memorial Chapel at Valley Forge, Penn., is being built on this same principle. The Rev. W. H. Burk, who started this work and now has it in charge, has had the courage and faith to put the result of a year's work into the foundations of a great memorial rather than into a complete small chapel, well knowing that it may take years to complete it.



ENTRANCE.

If this policy, which is governing the erection of these buildings, could be applied more generally I believe there would be less temptation to erect imitations of what we cannot afford, together with more honesty and frankness in church building as a consequence and a more general interest in building up noble structures by those who now lack the courage to commit themselves to a large undertaking.

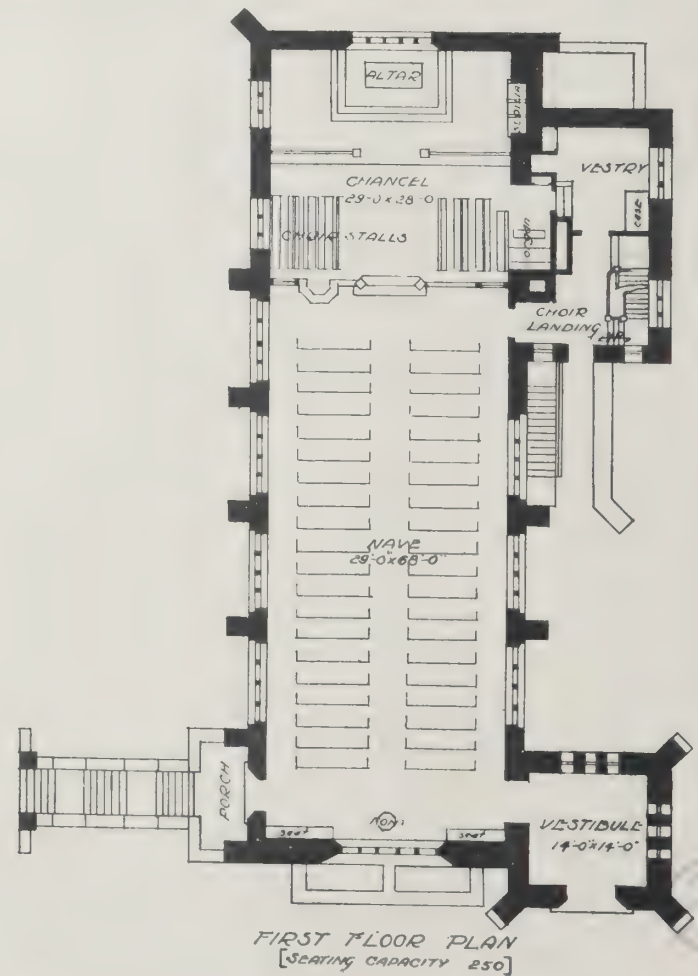
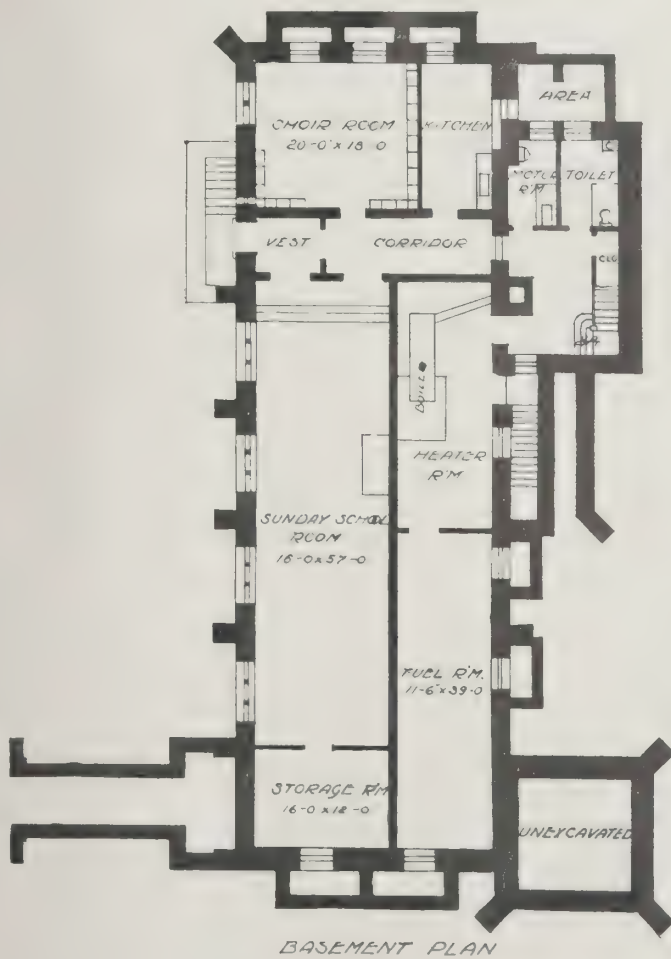
To be started in the right direction means everything and must eventually lead to good and original work.

Until we plan our churches so that all may do their share, no matter how small, providing it is always done well, and until we give up the idea

of doing too much at once, we can scarcely expect a greater proportion of good work.



ST. JOHN'S CHURCH, LOWER MERION, PA.
Field & Medary, Architects.



CHRIST CHURCH, WINNETKA, ILL.
William A. Otis, Architect.

Boston Brickwork. IV.

SUBURBAN RESIDENTIAL WORK.

TURNING from urban to suburban work we shall find a recurrence of practically the same characteristics that distinguish the city fronts. The desire for sobriety and dignity is almost everywhere expressed, together with the very decided preference for the Colonial motif. Viewed historically, the only difference is the appearance about 1845 to 1850, or possibly later, of a distinct English Gothic type of house, built of brick, often with much wooden decoration and with the exterior walls painted. To our mind many of these buildings are distinctly attractive. Those in the Longwood district of Brookline were, we believe, mostly designed by George Dexter, architect, and many of them stand to this day examples of sensible planning and pleasing, simple design. These were followed by the Mansards of the old *régime* which need no comment. The Victorian Gothic or second Gothic period produced another type, which frequently retained the Mansard roof and usually insisted on red pressed brick, dark mortar, limestone trimmings and slated roofs.

While the conditions which attend the designing of a suburban house, standing free in the midst of trees and shrubbery, make the planning of such a building a much different matter from that of a city house, it is not to be expected that the general character of the designs will vary much from that which prevails in the neighboring city. This character is determined by the settled preferences and habits of the population rather than by the notions of the architects or their desire to "try on" new or adopted motifs or ideas. It is, therefore, entirely the expected thing to find Colonial and Georgian work reappearing in the shady streets of Brookline and Newton and with the same practical unanimity in favor of the water-struck brick. The latter preference indeed has its almost amusing side, — as when lately, in the writer's experience, a light colored brick was "turned down" by the committee on a building for semi-religious purposes as actually having a harmful if not immoral influence on the *habitués* of the structure. Fortunately not all house builders have such notions, or there would be no relief whatever from the uniform red of Boston's street fronts.

A good example of the use of gray brick is found on the way to Brookline in Mrs. Gardner's new Fenway Court, the "Venetian Palace" of the yellow press. The building is certainly original and has many features over which architects would do well to ponder. The exterior walls are absolutely plain, almost destitute even of window caps, but instead of string courses and cornices with "festoons and egg and dart" painfully copied by jaded draughtsmen from "Buhlmann and Ragnenasy," there appear, browned and beautiful with age, the charming sculptures of Genoa and Venice and balconies of wonderful wrought iron from the old palaces and chateaux of France. These fragments, set here and there into the walls, give an exceeding interest to the façades, while the entire mass is held together by a sloping Italian roof of red tiles with wide projecting eaves. The illustration (No. 52) shows the south side with its loggia and garden wall and curious lattices.

Comparisons of the value of designs have already occurred so frequently in these articles that the author will merely put forward the residence of Mr. Henry S. Howe on Ivy Street in Longwood, by Peabody & Stearns, as the first in our list of suburban brick houses. The design is dignified, substantial and withal graceful. The precedent is quite clearly the "Mayor's House" at Chichester, but the effect, with the terrace and high steps and gateway, seems as restful and appropriate as if it were of local origin. Like most of the following examples, it needs more land for the best results. The material is dark water-struck brick with black headers, pine cornice and light blue slate roof. (Nos. 53, 56, 57 and 58.)

Near by is the Fish residence, skillfully remodeled from a commonplace Mansard roof brick house into a dignified and stately mansion, by Winslow & Bigelow. (Nos. 54, 55 and 59.) The rear, with its colonnade and lattices, is quite striking, but the design of the glass marquise over the main entrance savors a little of commercialism. There is a charming little brick stable by the same firm on Essex Street in the rear. (No. 60.)

The Wightman residence, not far away, by Shepley, Rutan & Coolidge, has already been illustrated in THE BRICKBUILDER and we only present two views in detail. (Nos. 64 and 65.) This design is by far the most striking in Brookline, recalling in some ways the feeling of the Petit Trianon. Although wellnigh perfect in detail and general composition, it lacks domesticity. Opposite is a very agreeable brick Colonial house, prettily shaded by great elms, by Thomas M. James. (No. 66.)

On Carleton Street, near the Howe and Fish residences, there is a large brick house by George F. Newton, still more clearly recalling the Chichester house. (No. 61.)

No. 67 is a large brick house by Winslow & Bigelow at Chestnut Hill, in a style of which probably twenty examples can be found near Boston. The style is ample and dignified, but implies a somewhat unnecessary frugality of effort on the part of the designer. Judging by its frequent repetition, the motif is a popular one with the laity. On the other hand the little square house on Suffolk Road near by, by H. F. Bigelow, is full of suggestion and not only shows study but refinement and enthusiasm. (No. 62.)

Farther out, on Fisher Hill, some brick houses with Dutch feeling have been built, one of which we illustrate. (No. 63.)

The remaining four views illustrate the tendency of dwelling house work built in blocks for the market by speculators. No. 68 is a portion of a block on Beacon Street, near St. Mary's. The material is smooth red Roman brick with white joints and limestone trimmings. The block on Monmouth Street (No. 69), built some time ago by Ball & Dabney, has always been satisfactory, while No. 70 on Beacon Street, by A. H. Bowditch, in Perth Amboy brick and brownstone and with green shingle roofs, possesses considerable interest. No. 71 is also on Beacon Street, and is a pleasant and simple row of façades in the usual water-struck brick and black headers.



52. FENWAY COURT, HOUSE OF MRS. JOHN L. GARDNER.
Willard T. Sears, Architect.



53. HOUSE FOR HENRY S. HOWE, ESQ., BROOKLINE, MASS.
Peabody & Stearns, Architects.



54. FROM THE GARDEN.



55. FROM THE ROAD.

HOUSE FOR F. P. FISH, ESQ., BROOKLINE.

Winslow & Bigelow, Architects.



56. FRONT ENTRANCE.



57. REAR.

HOUSE FOR HENRY S. HOWE, ESQ., BROOKLINE. Peabody & Stearns, Architects.



58. ENTRANCE TO LIBRARY, HOWE HOUSE.



59. PORCH OF FISH HOUSE.



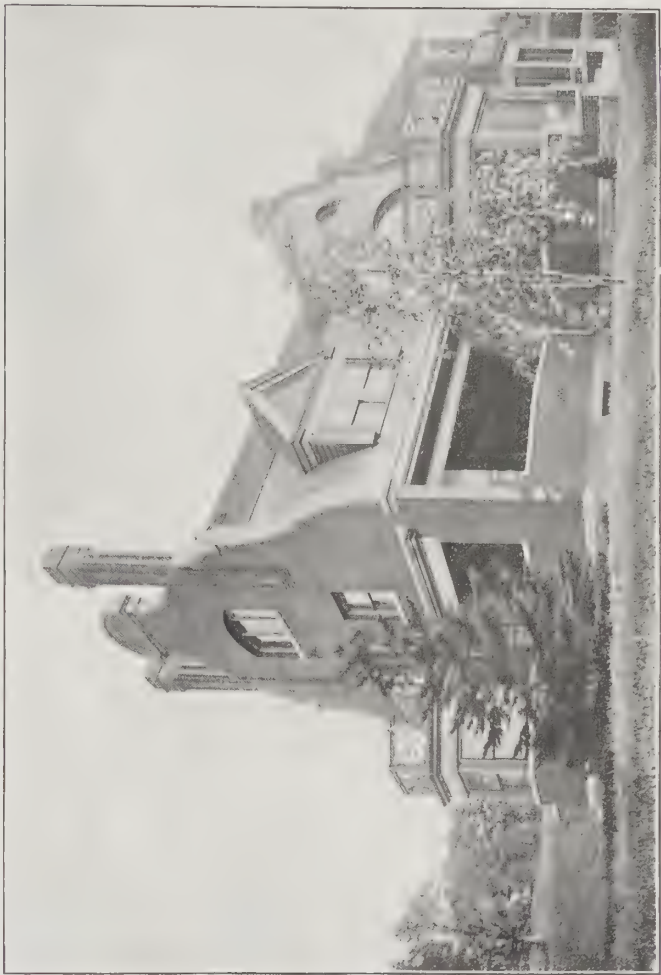
60. STABLE, FISH HOUSE, BROOKLINE.
Winslow & Bigelow, Architects.



61. HOUSE, BROOKLINE.
George F. Newton, Architect.



62. HOUSE, CHESTNUT HILL.
H. F. Bigelow, Architect.



63. HOUSE ON FISHER HILL, BROOKLINE.



64. DETAILS OF WIGHTMAN HOUSE, BROOKLINE, MASS.



Shepley, Rutan & Coolidge, Architects. 65.

66. HOUSE, HAWES STREET, BROOKLINE.
Thomas M. James. Architect.67. HOUSE, CHESTNUT HILL.
Winslow & Bigelow, Architects.



70. ROW OF HOUSES, BEACON STREET, BROOKLINE.



68. DETAIL, HOUSES ON BEACON STREET.



69. HOUSES, BROOKLINE. Ball & Dabney, Architects.



71. ROW OF HOUSES, BEACON STREET, BROOKLINE.

Editorial Comment and Selected Miscellany

CONVENTION OF THE ARCHITECTURAL LEAGUE OF AMERICA. REPORT.

THE Architectural League of America held its Sixth Annual Convention at the Hotel Schenley in Pittsburgh, April 17 and 18. John T. Comes, president of the Pittsburgh Architectural Club, made an address of welcome on behalf of his society to the delegates of the following twelve bodies: Architectural League of New York, T-Square Club, Philadelphia, Cleveland Architectural Club, Pittsburgh Architectural Club, Chicago Architectural Club, Detroit Architectural Club, St. Louis Architectural Club, Washington Architectural Club, Toronto Architectural Eighteen Club, University of Illinois, National Society of Sculptors, Society of Mural Painters.

To this address President Ittner made reply, closing with these words: "This convention of the League, I feel, must mark a turning point in its career. Local conditions have changed in large measure the original purposes of the League. Its energies should now be directed to the more serious problems confronting it. Work clearly within its province is the education of the draughtsman, as the club must take the place of the school in the case of those men who are not afforded the opportunity of obtaining an academic education. The movement for civic improvement is steadily growing. The work of the League, through its club competitions and exhibitions, is creating a strong public sentiment; and as our friend from Pittsburgh states, 'It is no far distant day when each city of any importance in our country will have its municipal group, its plaza, flower beds and its band.'"

N. Max Dunning was chosen speaker of the convention and Percy Ash, secretary.

Various communications were read, and then the reports of the Executive Board, and the standing committees for the past year, — those devoted to Publicity and Promotion, Code of Ethics and Competitions, the Circuit Exhibition, Education and Records. These were placed in the hands of a special committee, with instructions to analyze and condense them, and on the basis so formed to offer suggestions for the activity of the League during the coming year.

The individual clubs gave, through their representatives, short *résumés* of their past year's work.

A public meeting was held on Monday evening in the Pittsburgh Conservatory of Music, at which Charles Mulford Robinson presented a paper (read by Herbert C. Wise) on "The Comprehensive Planning of Cities." William B. Ittner gave a talk, illustrated with lantern slides, upon the public schools of St. Louis from the point of view of their architectural design, construction and equipment. This was followed by an address entitled "The Grouping of Municipal Buildings," delivered by Frederick S. Lamb.

On Tuesday morning the report of the special com-

mittee upon all reports of the year was read, and the following recommendations adopted by the convention:

That a committee to work in coöperation with the American Institute of Architects be appointed, and to report at the next convention.

That the printing of the reports of this convention in the form used in the past be discontinued, but that a limited number of copies be prepared at small expense for the use of the various clubs and committees.

That the members of the League consider means of establishing fellowships in the architectural schools of America.

That the Architectural League of America establish and maintain an Annual Traveling Scholarship, to be competed for by the representatives of each constituent organization in the League. Representatives to be selected by preliminary competition in each club. This to be designated as "The Traveling Scholarship of the Architectural League of America," and the necessary funds to finance same to be raised by popular subscription in the various cities represented by the constituents of the League.

That the League coöperate with the Alliance of Civic Organizations in such manner as the Executive Board may see fit.

That a Committee on Municipal Improvements be appointed to compile and publish a review of this work at the expense of the League, the expense not to exceed \$200.

That the Committee on Education be requested to prepare a syllabus for the use of the individual clubs and to supply a copy of the same to each.

That the policy of the Architectural League of America henceforth be that the personnel of each committee be composed of members residing in the same city; that the chairman of each committee be appointed by the speaker of the convention; and that each chairman recommend to the Executive Board, for ratification, the names of the other members of this committee.

That the Circuit Exhibition be discontinued, but that constituent members of the League desiring exhibitions from other cities may obtain them upon application to the Executive Board.

That at each convention of the League each club send with its delegation a limited number of works of architecture and the allied arts representative of their community, for exhibition at the sessions.

That the League establish and publish annually an architectural review consisting of illustrations and essays or addresses selected from the subjects published by the various clubs in their exhibition catalogues and from the addresses prepared and read to the various clubs of the League, and that in order to facilitate this work the clubs be requested to adopt a uniform size of page for all illustrated catalogues and to preserve all plates and etchings for use in this work. Any profits derived from the sale of these books are to be devoted to the maintenance of The Traveling Scholarship of the League.

The luncheon which followed this session was one of the most pleasurable occasions of the entire two days, and quite unexpected. Messrs. Rutan and Russell had invited all the delegates to the Duquesne Club, where they had provided nothing short of a mid-day banquet. The cordial gathering called forth several excellent toasts of the fervent and enthusiastic sort which long remain in the memory of hearers. Particularly so was Mr. Bitter's plea for originality, truth and modern conception in design. Mr. Lamb declared with earnestness the advantages of the broad foundations of the Architectural League of America, and the great public service it could therefore accomplish. Messrs. Russell and Rutan responded to the cheers of hospitality appreciated, and were followed by Messrs. Eames, Lauber and Ittner, before the room was reluctantly left for the concluding business sessions of the convention at the Schenley.

The following chairman of committees for the coming year were named: Publicity and Promotion, Herbert C. Wise; Current Club Work, Charles S. Schneider; Education, Newton A. Wells; Coöperation with the American Institute of Architects, Ernest J. Russell; Municipal Improvements, Frederick S. Lamb.

In the face of sincere modesty on the part of the two candidates nominated, N. Max Dunning was unanimously elected president, "simply because," he declared in a speech of hesitating acceptance, "Mr. Ittner was more successful than I in conducting his campaign of withdrawal." The convention showed its disagreement with this remark by gayly shouldering its new head and bearing him aloft at the close of the sessions.

It was decided to hold the next convention in New York.

After a vote of thanks to the outgoing officers of the League, to the Pittsburg Club, and to Messrs. Rutan and Russell for their hospitality, the session was brought to a close by a paper entitled "American Style," prepared and read by Titus de Bobula.

The convention was ended by a banquet at which C. G. MacClure was an able toastmaster, bringing to the floor Messrs. Ittner, Dunning, Eames, Lauber, Hynes, Comes, Dr. John S. Brashear, E. Z. Smith of the Art Society of Pittsburg and Director Arthur Hamerschlag of the Carnegie Technical Schools.

The cleverly designed menus reiterated the plea for the preservation of the Courthouse, and that subject of local and national moment was several times referred to in the speeches; the declaration that Richardson's masterpiece would not, in the end, be altered, calling forth loud applause.

RESULTS IN THE LADIES' HOME JOURNAL COMPETITION.

IN the Ladies' Home Journal Competition for a three thousand dollar house, the first prize (\$1,000) was awarded to William G. Rantoul, Boston; second prize (\$500) to James H. Clapp, Boston; third prize (\$200) to William G. Crowell and James H. Buttmer, Boston.

ROTCH TRAVELING SCHOLARSHIP.

THE Rotch Traveling Scholarship has this year been awarded to W. D. Crowell of the office of Parker & Thomas. The competition in design was judged by a

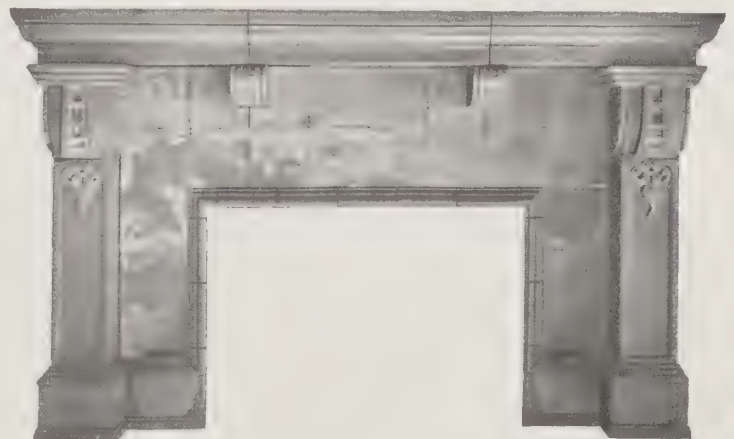


PORCH, SAMUEL READY PUBLIC LIBRARY, BALTIMORE, MD.

Wyatt & Nolting, Architects.

Terra-cotta columns made by New York Arch. Terra-Cotta Co.

jury consisting of Joseph E. Sperry of Baltimore, Philip Sawyer of New York, and W. E. Chamberlin of Cambridge. There were seven competitors, three of whom dropped out in the preliminary examination, leaving four in the competition in design, of whom three had returned from Paris especially to take the examination. Mr. Crowell was born in Hyannis, Mass., and received his architectural schooling at the Institute of Technology. He was placed second in the Rotch competition of last



MANTEL EXECUTED IN COLORED MATT GLAZE FAIENCE BY THE ROOKWOOD POTTERY CO.

year and was placed first in the twelve-hour sketch and first in the twenty-four-hour sketch for the Beaux Arts Society prize last year, receiving second place in the finals. He has also won special prizes at the Institute, and his name appears as a winner in several of THE



HOUSE, FROM BELOW.



FROM LIBRARY WINDOW.

CHAPTER HOUSE, CORNELL UNIVERSITY, ITHACA, N. Y.

George R. Dean, Architect.



ELLIPTICAL ROTUNDA DOME, NEW YORK CUSTOM HOUSE. Cass Gilbert, Architect.
(Span 75 feet by 130 feet. Guastavino construction.)

BRICKBUILDER and other similar competitions. The problem this year called for a building to be used for exhibitions of painting, sculpture, architecture and the allied arts.

COSTLY SERVICE.

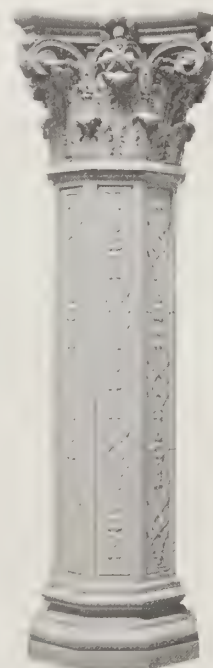
THE cost of laying brick has been increasing for several years, and the cause of this increase is not far to seek. While the working hours of the bricklayer are less, the wages have advanced far more in proportion, with the result that the bricklayer, who in 1898 was paid \$21.50 for fifty hours per week, received \$26.12 for forty-



HOUSE AT NEWTON, MASS.

Built of "Shawnee" Brick, made by Ohio Mining & Manufacturing Co.

seven and a half hours' work five years later. The bricklayers are organized in their unions to a higher degree than any other trade. Their work is absolutely essential to nine-tenths of our building operations, and in a great many of our largest buildings they are paid whatever price they demand, almost without reservation. We have known of bricklayers demanding and receiving as high as \$14 per day, and \$5 or \$6 per day for a good face bricklayer is quite common pay. Besides this every bricklayer must have a tender, and the more tenders on a job often the less willing are the masons to economize time and labor, with the result that even with wages at the same price as in past years the cost of work to-day is much increased. Comparing the wages of bricklayers in the various countries we find that the average in the United States for 1903 was fifty-five cents per hour, in England twenty cents, Germany and France about thirteen cents, and Belgium about eleven cents. We expect to pay more for everything in this country than is paid abroad, but we flatter ourselves that we get more for our money, and the experience of the Westinghouse Company in England, who were able to lay fifteen



DETAIL BY
CONKLING-ARM-
STRONG TERRA-
COTTA CO.
D. H. Burnham
& Co., Architects.



HOUSE AT NEEDHAM, MASS.

Philip B. Howard, Architect.

Brickwork waterproofed by Cabot's Brick Preservative.

and eighteen hundred bricks a day with imported American workmen as against five or six hundred with natives, is often cited as a justification of the high prices which are paid the American mason. We are not able to quote exact figures, but we believe that while the bricklayers in this country are paid more per hour, the average per year is not so very much more than it is in England, and if the labor unions were not so disposed to limit production by frequent strikes, by reducing the workman to the average of the poorest rather than raising to the level



A ROOF OF LUDOWICI TILE.

of the best, we believe that the rate per hour might be reduced very considerably without reducing the annual income, and by such reduction material saving could be effected in the cost of brickwork. It certainly is time to consider whether it is not possible to reduce the present extremely high price of building.

W. L. B. JENNEY.

AFTER a long and honorable career in the prac-

tice of architecture in Chicago, Mr. W. L. B. Jenney has retired from active practice. Owing to poor health he has spent the past winter in California, and has concluded to make his permanent residence in Los Angeles.

DETAIL BY ATLANTIC TERRA-COTTA CO.
Hubbell & Benes, Architects.

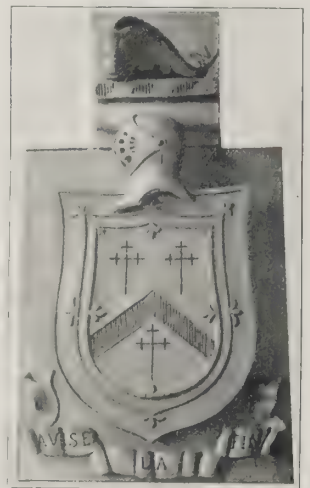
Mr. Jenney was educated in Paris in architecture and engineering, and returned to this country prior to the breaking out of the Civil War. Upon enlistment he was assigned to the engineer corps under General Grant, and was mustered out as Brevet Major Chief of Engineers on the staff of General Sherman. He located in Chicago, and began the practice of architecture in 1887. From the start his work was recognized, and it has left its impress upon the rapid growth of the city.

Mr. Jenney's training as an engineer turned his mind towards the growing use of iron and steel in construction. His war experience urged him to do and dare, so that in the spring of 1884 the architectural world saw the first start of what has revolutionized building construction, which was when the Home Insurance Building at La Salle and Adams

streets, Chicago, reared its skeleton iron and steel frame above its cohesive covering of brick and stone masonry, and it stands to-day in basic principle the first building of skeleton construction.

Many of the leading architects of Chicago were at one time in Mr. Jenney's office, notably D. H. Burnham, Louis H. Sullivan, I. K. Pond, Howard V. D. Shaw, William Holabird, Martin Roche, Jas. G. Rogers, N. S. Patton, A. H. Granger and others.

The business will be carried on under the firm name of Jenney, Mundie & Jensen, by Mr. Mundie and Mr. Jensen, who have been with Mr. Jenney for the past twenty years.

DETAIL BY EXCELSIOR TERRA-COTTA CO.
Maginnis, Walsh & Sullivan, Architects.DETAIL BY INDIANAPOLIS
TERRA-COTTA CO.
Peters, Burns & Pretzinger,
Architects.



DETAIL OF CONSTRUCTION, NEW HAMBURG AMERICAN PIER, HOBOKEN, N. J.

THE NEW HAMBURG AMERICAN PIER.

WE give herewith an illustration showing the main entrance to the passenger department in the bulkhead building for the Hamburg American Pier, located at Hoboken, N. J., in which constructive terra-cotta has been used with very marked success to produce an architectural effect. The columns and pilasters are built out of four-inch porous tile, the hollow spaces about the column being filled in solid with crushed stone concrete. The wall dividing the freight and passenger departments is thirty-six feet high in the center and is built of eight-inch porous tile without any metal reinforcement. The arches shown in the illustration have a clear span of twenty-five feet and a rise of one inch per

DETAIL BY STANDARD TERRA-COTTA WORKS.
E. C. & G. C. Gardner, Architects.

lineal foot of span. They are constructed entirely of eight by twelve by twelve inch porous partition blocks, with no metal reinforcing whatever, the blocks being laid up with a sixteen-inch soffit. The floor construction which forms the ceiling of first story is of six-inch terra-cotta segmental arches. This is a perfectly legitimate architectural treatment of the material and for purposes of this description affords a chance for some very interesting constructive study. Considering the excessive heat which would result from a conflagration in a building filled as this is likely to be at times with highly combustible material, there is no other construction on the market which could possibly give as much security with as large an opportunity for an architectural treatment.

ENGINE HOUSE NO. 79, NEW YORK CITY.
Alexander Stevens, Architect.
Built of Kreischer Brick.

DETAIL BY NEW JERSEY TERRA-COTTA CO.

IN GENERAL.

Dean & Dean, architects, have succeeded George R. Dean. Office, 218 La Salle Street, Chicago.

Hugh McLellan, architect, has opened an office at 1123 Broadway, New York City.

Davis, McGrath & Shepard, architects, have removed

DETAIL BY WINKLE TERRA-COTTA CO.
Barnett, Haynes & Barnett, Architects.



DETAIL BY PERTH AMBOY
TERRA-COTTA CO.
Fontaine & Kinnicutt, Architects.

James S. Arnot, architect, has formed a copartnership with H. F. Lilley,—firm name Arnot & Lilley. Offices, 519 Fernwell, Spokane, Wash. Samples and catalogues desired.



DETAIL BY NORTHWESTERN TERRA-COTTA CO.
Holmboe & Lafferty, Architects.

We are informed by one of the leading architects of Norfolk, Va., that there is great need in that city of live contractors in every branch of the building trade and a splendid opening for the manufacture of bricks and other building material.

The white matt glaze terra-cotta for the Public Library at Colorado Springs, Colo., Calvin Kiessling, architect, illustrated in THE BRICKBUILDER for April, was furnished by the Excelsior Terra-Cotta Company.

Robert C. Martin & Son's rough Dutch red brick



A HOUSE BUILT OF TIFFANY ENAMELED BRICK.

their offices from 203 Broadway to the Metropolitan Building, 1 Madison Avenue, New York City.

Daniel Riggs Huntington, formerly of the firm of Fisher & Huntington, Denver, Colo., has opened an office for the practice of architecture at 419 Coleman Building, Seattle, Wash. Mr. Huntington would be glad to receive catalogues and samples of builders' supplies.

has been selected for Engineers Club, New York City. Andrew Carnegie, donor; Whitefield & King, architects.

Thirty thousand barrels of Akron Star-Brand Cement will be used in paving the streets of Detroit.

The new bank building at Baltimore, from designs of T. Henry Randall, will be of white glaze terra-cotta made by Atlantic Terra-Cotta Company.

The American Enameled Brick and Tile Company, of New York, has closed within a short period orders for about 700,000 enameled brick which are to be used in bank buildings, railway stations, schoolhouses, fire engine houses, hospitals, residences, pumping stations, power stations, etc., now in course of erection in different parts of the country. Not many years ago a million enameled brick represented the entire output of American manufacturers.

WANTED -- A good general draughtsman who can understand and lay out working drawings and has ability in designing. Write, stating age, experience, references and salary desired, to Designer, care "The Brickbuilder."

WANTED — Chief Draughtsman who is competent and thoroughly familiar with the different styles of architecture and construction of high grade ornamental iron and bronze. State experience and salary expected.

FLOUR CITY ORNAMENTAL IRON WORKS, Minneapolis, Minn.

THE SCHOOL OF ARCHITECTURE

University of Pennsylvania.

THE FOUR YEAR COURSE offers full professional training, with an option in Architectural Engineering, leading to the degree of B. S. in Architecture.

THE GRADUATE YEAR affords opportunity for advanced work in design and other subjects, leading to the degree of M. S. in Architecture.

THE TWO YEAR SPECIAL COURSE for qualified draughtsmen offers advanced technical training, yielding a Certificate of Proficiency.

THE UNIVERSITY also grants advanced standing to College graduates; offers a combination of liberal and technical courses whereby the degrees of A. B. and B. S. in Architecture can be taken in six years, and conducts a Summer School in which architectural studies may be taken.

For full information address

DR. J. H. PENNIMAN, DEAN, COLLEGE HALL,
UNIVERSITY of PENNSYLVANIA,
PHILADELPHIA, PA.

Architectural Faience. Competition A.

Subject: A Garden Wall Fountain.

ONE CASH PRIZE ONLY. FIFTY DOLLARS for BEST DESIGN. Also MENTIONS.

Competition closes May 31, 1905.

PROGRAMME.

In a brick wall which encloses a small formal garden, at the end of a path, it is desired to place a Wall Fountain which is to be executed in Architectural Faience.

The Fountain, with its embellishments, is to occupy a wall space of not more than one hundred square feet.

The color scheme may be indicated by a key.

Garden Pots and other accessories may be shown.

Drawings required. Plan and Elevation at a scale of one-half inch to the foot.

Drawings may be rendered at will on a sheet of unmounted white paper, measuring 16 inches by 20 inches.

Each drawing is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with a *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawing is to be delivered at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before May 31, 1905.

The prize drawing is to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names five cents in stamps.

The designs will be judged by a well-known member of the architectural profession.

Competition open to every one.

INDOORS AND OUT

Is the name of a new monthly magazine

Devoted to Art and Nature

TREATING OF

ARCHITECTURE as a factor in beautifying the earth, as shown in the best examples of every kind of structure for the shelter and comfort of man, especially THE DESIGNING, PLANNING, FURNISHING AND DECORATING OF THE HOME.

Landscape Architecture and Gardencraft.

Civic Art in every phase.

Regions of the beautiful and picturesque in the old world and the new.

The fine and applied arts.

The betterment of modern life by improving its environment.

The part of beauty in the progress of to-day and to-morrow.

The magazine will be published by Arthur D. Rogers and Herbert C. Wise, under the name of

ROGERS AND WISE
COMPANY.

The first number will be issued October 1, 1905.

Price \$3.00 yearly.

25 cents a single copy.

To those ordering subscriptions for 1906 — if order is accompanied by cash and received by October 1, 1905 — will be given free the numbers for October, November and December, 1905.

Competition for a Cover Design

The publishers offer a cash prize of One Hundred Dollars for the best cover design submitted in a competition, which shall be open to all, and governed as follows:

THE DESIGN. Shall be 15 x 20 inches and rendered suitable for reduction to 9 x 12 inches. It shall be on white paper or cardboard measuring exactly 21 x 28 inches. It shall be suitable for printing in two colors (which may be suggested by the competitor), and must bear the following lettering only:

INDOORS AND OUT

A Monthly Magazine Devoted to Art and Nature.

SUGGESTION. A space may be provided in the design for inserting an illustration. This feature is not necessary.

THE DRAWINGS. Must be delivered flat to Rogers and Wise Company, 85 Water Street, Boston, on or before July 15, 1905. Each drawing must bear a device, and accompanying it is to be a sealed envelope also bearing this device and containing the author's full name and address.

JUDGMENT. The Competition will be judged by two architects and one illustrator.

AWARD. The author of the design placed first will receive One Hundred Dollars.

In addition to this there will be three mentions, as follows:

First Mention.

Second Mention.

Honorable Mention.

The prize drawing will become the property of Rogers and Wise Company, who reserve the right to purchase, at the price of \$25.00, any of the other designs submitted, and also to exhibit all designs.

All drawings, except the prize drawing and those purchased, will be returned if a sufficient amount is enclosed in the sealed envelope containing the author's name to cover cost of carriage.

ROGERS AND WISE COMPANY.

85 Water Street, Boston, Mass.

\$1,800.00 in Prizes

To Architects and Designers

We want plans for an attractive and practical kitchen—for a kitchen in a residence or flat for people of ordinary means.

This kitchen must be a model of excellence in every way and must contain a kitchen cabinet embodying the full working surface of the ordinary kitchen table, utilizing the space above and below the table to make convenient receptacles for food supplies and cooking utensils used in the everyday work in the kitchen.

This model kitchen should be designed particularly for the housewife who does her own work, and every possible effort should be made to carry out the principles outlined in the following paragraph.

THE McDOUGALL IDEA is to lighten the labor of the housewife, to make life easier and pleasanter for her, to save her innumerable steps and unnecessary work.

\$1,800.00 in Prizes for an Ideally Complete Kitchen

First Prize, \$1,000.00

Second Prize, \$500.00

Third Prize, \$300.00

Judges: Joseph Freedlander, Architect, New York City
Jules Guerin, Artist, New York City
W. J. Beasley, Architect, Chicago, Ill.

All designs submitted in this contest are to become the property of the donors of the prizes. Transportation charges must be prepaid on all designs. Drawings must be on the scale of three-quarters of an inch to the foot. They may be in line, in wash, in black and white or in color, according to the preference of the designers.

The standing of the judges insures absolute impartiality in making of the awards. The competition will remain open until August 1st, 1905.

Requirements of the Competition

Each competitor must submit:

- (1) Carefully drawn floor plan, showing location of doors to rear, to pantry, to dining room; placing of windows; arrangement of range, sink, ice box, kitchen cabinet, etc. If any necessary convenience is placed outside kitchen its position must be indicated on plan.
- (2) Carefully drawn elevations of four sides of kitchen.
- (3) Carefully drawn perspective and elevation of side containing the cabinet. The shape and proportions of the cabinet should accord with his kitchen scheme. All necessary sections should be indicated.
- (4) A clear description of the kitchen and cabinet, not exceeding seven hundred words.

Points to Consider

Kitchens and kitchen furnishings are usually ugly. In the revival of domestic art this part of the house has as yet been overlooked. The chief aim in offering these prizes is: First, to draw out the best thought of the best designers on kitchen conveniences; and, second, to give the whole country the benefit of their thought. The prizes have been made exceptionally generous in order to induce the busiest and most skilful architects to take part in this competition.

In the model kitchen the useful need not exclude the agreeable. Ventilation must be borne in mind; the building in of the range; placing of windows, both for light and decorative effect; treatment of woodwork; the use of such material for floor, walls or table tops as has some special recommendation for sanitation, cleanliness, durability or other practical purpose. Suggestions for furniture and color scheme are in order.

ABOVE ALL, there should be borne in mind the possibility of IMPROVEMENT IN THE KITCHEN CABINET, that indispensable adjunct of the average kitchen. The ideal cabinet should present all the housewife's requirements within easy reach of her hand and should have a full working table surface. To save space, to save steps, to save trouble is its threefold object. It should not be cramped or crowded; all its parts should work freely; its proportions and lines should be artistic.

Special Note

To assist competitors a booklet showing the best kitchen cabinets now being put out by the factory will be mailed on request.

The competition is open to all architects, draughtsmen, furniture designers, etc., residing in the United States, Canada or Europe.

The competition will remain open until August 1, 1905.

All designs must be addressed to **G. P. McDOUGALL & SON, Indianapolis, Ind., U. S. A.**

THE BRICKBUILDER.

VOL. 14

JUNE 1905

No. 6

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FROM WORK OF A. W. LONGFELLOW, GUY LOWELL, WILLIAM L.
PRICE, JAMES PURDON, EDGAR V. SEELER, HENRY VAUGHAN.

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CLOISTER, CONVENT OF CHRIST, THOMAR, PORTUGAL.

THE BRICKBUILDER

VOL. 14 No. 6 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY JUNE 1905

THE BRICKBUILDER.

PUBLISHED MONTHLY BY

ROGERS & MANSON,

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the American News Company and its branches.

ADVERTISING.

Advertisers are classified and arranged in the following order:—

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Advertisements will be printed on cover pages only.

MUNICIPAL IMPROVEMENTS AND COMPETITIONS.

IN all the great municipal improvements which have been projected throughout the country, architects and architecture necessarily play a great part, and the developing effect upon the profession of the inception and carrying out of these great schemes is becoming every day more apparent. We have not yet by any means reached the point in our municipal architecture which was passed long ago by such cities as Vienna, Buda-Pesth and Paris. It is evident, however, that we are on the eve of a tremendous architectural development, a development in which there will be room for every architect of marked ability. One of the few uncertain problems in connection with this development is how to call out most surely the best architectural talent. The plan which has been followed in Paris and to a very considerable extent on the Continent of Europe is to throw nearly everything open to public competition. This is a method of selection which naturally finds favor with those who are young in the profession. At the same time it is not viewed with full approval by architects of established reputation who are familiar with the various direct and indirect channels through which the architect is able to make his influence

felt. The other method of selection has been followed perhaps quite as much in this country as the competitive one, namely, the deliberate choice of an architect based upon his reputation and the work he has done. We should be sorry to have either method entirely prevail. The results so far have not been altogether such as would indicate that competitions invariably or even in the majority of cases imply wise selection. Of the notably great public improvements a surprisingly small percentage have been planned or designed as a result of competition. The same is true of a great preponderance of the government buildings aside from those erected by the United States. Reputation, proven ability, the record of a long and honorable practice, surely should count for something as against the fortuitous results of a competition in which the authors are unknown and in which the youngest beginner may have just as much chance of hitting the mark as the most available talent in this country; and yet to deny the great educational value of competitions is to be indifferent to a very marked feature of our national growth. The profession constantly needs new blood. Although architecture is essentially a retrospective art and is governed largely by precedent, we yet need the influence of what we might almost term the untrained ideas in order that the conservatism shall not be hide-bound, that the retrospection shall not produce a blindness to the needs of to-day. The keen, sharp competition of wits, the emulation of youthful enthusiasm are what will keep our profession in the line of growth, and both the young and the older members need just such stimulus if they are to accomplish the best results. The large public improvements which are surely coming will undoubtedly continue to be awarded very generally to those who have won distinction and reputation in the legitimate work of the profession, but at the same time the competitions will draw into the ranks the younger and the untried men who will bring to the problems all the indomitable buoyancy of youth and keep us from becoming in any sense moss-grown. We do not believe it will ever be a healthy condition for the profession to feel that it can obtain its opportunities only through competition. No more do we feel that it would be for any one's interest that experience and reputation should count for nothing. And if we can rightly appreciate the present conditions in this country, the balance is pretty evenly held between enlarged opportunities for the young men and distinct recognition of achieved success, so that, as nowhere else in this world, the conditions are fair and stimulating to both.

Ecclesiastical Architecture.

PAPER IV.

BY RALPH ADAMS CRAM.

ENGLAND.

EVERY day and increasingly it is being borne in upon us that we are even now in the midst of a great spiritual awakening, the fruition of which no man may foretell; that when the nineteenth century closed something more came to an end than an arbitrary epoch of time; that the new century is destined to be utterly and fundamentally different to the last, an era of spiritual expansion as that was an era of material achievement. Even the absurd and ephemeral follies of the time, the wild seeking for, and acceptance of, exaggerated types of personal leadership so long as they are at the same time

For almost half a century, however, the religious revival was confined almost wholly within the limits of the Established Church in England and the Episcopal Church in the United States. It worked slowly and quietly, never taking on the aspect of a great popular movement, for it was coeval with the highest popularity of the ultra-scientific-agnostic phase of fashion. The earlier revival of the Wesleys, which was indeed a popular movement, had apparently reached the limit of its possibilities, and for fifty years little was done beyond the slow, internal reformation of the Anglican branch of the Catholic Church, — the English "counter-reformation" it might well be called, since it was aimed so largely towards undoing the evil half of the notable achievements of the "Reformation." In no respect a widespread uprising of the race, it was a movement the vast potency of which we are beginning now to under-



THE TREATMENT ENGLAND HAS ACCORDED HER GREATEST MONUMENTS.

obscure, dogmatic and emotional, testify to the indestructible hunger in the human soul for religion. This hunger is now, after several centuries of doubt, denial and vain agnosticism, bursting all bonds and clamoring for the long denied spiritual food, seizing greedily upon the noxious as upon the wholesome, so only that it is food, and of the kind, apparently, so long discredited and refused by a world unbalanced by the destruction of the sane principles of law, order and obedience.

Another evidence of this remarkable movement lies in the altogether extraordinary recrudescence of interest in ecclesiastical architecture as exemplified, for instance, in the notable series of papers now being published in this magazine. Seventy-five years ago this movement began in England, accompanying the great spiritual awakening that was signalized by the Oxford Movement.

stand as, the old superstitions of the last century sloughed off, we find a strengthened and revived Church ready to lead in the truly popular awakening that is now in progress.

The architectural revival incited by the immortal Pugin was instantly and astoundingly victorious in England. Ten years sufficed to see the last shards of the classical fashion relegated to the dust heap, and for almost seventy-five years England has been steadily at work laboring in very varied ways to make Gothic or Christian architecture a living thing again. At one time it seemed as if America were to follow suit, but though Upjohn and Renwick did their best — and it was quite as good as the then contemporary work in England — the products of their disciples were pretty bad, the seed fell on stony ground, the progress lapsed, and when Richard-

son injected his new and powerful vitality into the ferment the cause was lost, and after his death chaos, utter and complete, supervened.

So thorough had been the failure of the Church to demand and to develop a consistent style, so utterly had she failed to impress on the people her claims to consideration and the opportunities afforded by her necessities, she was practically disregarded by the great schools of architecture growing up all over the country; no thought was given to her needs, or even to the fact that religion was to be reckoned with either historically or practically; the entire mediæval period was ignored as of no architectural account; the style then evolved, the one and only consistent and complete mode of building developed by Christianity, was rejected as barbarous

tian architecture from any recognition. In spite of its efforts, Gothic — if we must call it by so meaningless a name — has come again to the front, and its appearance alone is enough to win the victory. So long as it was laughed or scorned into the dark, all was well, but publicity settles the question. The first school that establishes a chair of "Christian Architecture" is the one that will leap to the front beyond all rivals and will become the great agency in developing a logical and living architectural style for America.

Precisely this, though the concrete school was lacking, is what happened in England, and in this paper I desire to note most briefly the course of events in that country which is so absolutely ours that Englishmen and Americans are simply like two brothers, sojourning in



WHEN ARCHITECTURE WAS AN INSTINCT, NOT AN ARTIFICE.

and dead, and the only style held up for admiration was one which did violence to every Christian principle and impulse. Even now, apart from a slight historical patronage and a certain whimsical playing with Gothic forms in the development of empirical architectural problems, — as one might amuse one's self in the effort to recreate on paper an Egyptian, or Hindoo, or Buddhist temple, — the Christian style of architecture is practically ignored, and if a man would learn to serve the Church in stone he must learn elsewhere than in a school of architecture.

But the conditions that made this sort of thing possible no longer exist: the world is getting away from the schools, men have learned something of the wonder and the perfection and the persistent vitality of the style the Church developed, and now demands again, and it is impossible for neo-paganism longer to exclude good Chris-

different lands but tied together by all the heritage of family, the indestructible chain of an infinite sequence of common ancestors. We sometimes fail to realize adequately that American history goes back without a break to the Revolution, Plymouth Rock, the Elizabethan age, the Reign of Terror under Henry VIII, the Wars of the Roses, Magna Charta, the Conquest, the Heptarchy, St. Augustine and Julius Cæsar. We are not the Topsy of nations, but the heirs of English history.

English civilization was from the time of St. Augustine, St. Patrick and St. Columba, the child of the Christian Church, and in a most extraordinary degree was it the result of the activity of the monastic orders. The Benedictines of the south, the monks of Iona, St. Cuthbert and later the Cistercians of the north were the chief agents in civilizing the barbarous races, knitting them together, pre-



CHRISTIAN ARCHITECTURE AS IT ONCE
WAS IN ENGLAND.

paring them to support such defenders of human rights and absolute justice as the great prelates St. Anselm, Stephen Langton, Theobald of Canterbury and St. Thomas à Becket. Therefore from the earliest times the architecture of England was monastic in its inception as distinguished from the essentially episcopal architecture of the Continent. Until the Black Death, and after in a lesser degree, the monastic orders in England were the civilizing, educating and charitable powers in the land. There were many orders, severally independent, and in most instances independent amongst themselves; that is, each house was a sovereign power in itself. Racially, geologically and climatically the many subdivisions of England were widely different. Therefore English architecture became infinitely varied in its detail, and through the virtual independence of the hundreds of abbots almost completely personal. As the monks gradually took to themselves *per force* vast numbers of the duties we now postulate of the civil state, they became responsible for thousands of buildings of most varied types, not abbeys, priories and cells alone, but parish churches, chapels, chantries, hospitals, asylums, almshouses, schools, colleges, castles, manors, farmsteads and barns. The styles developed by mitered abbots and their subordinate priors, through the great guilds of masons and craftsmen, thus percolated down through every class of society, and the result was perfect unity of impulse expressed through infinite variety of personal genius and inspiration. Life in England from the Conquest to the Suppression was crescent and as well turbulent in its strenuous onrushing from one vantage point to the next. From all over the Continent impulses of every kind rained down on the little island: now the Benedictines were the leaders, now the Cistercians, now the friars; again, the throne was supreme, then the barons, then the knighthood and gentry. There never was time to work out any style or even any new motive to absolute finality; Glastonbury gave place to

Rievaulx and Whitby, these to York Abbey, this to Gisburgh; Gisburgh yielded to William of Wykeham and his amazing new style, and before this had expressed itself in any complete and consistent abbey or cathedral, Henry, the scourge of England, hurled the whole fabric of splendid civilization crashing to the ground, and brought in the awful anarchy of the reigns of Edward VI and Mary I.

From this two things follow that must always be considered in studying English Gothic: first, the incomplete nature of each epoch of the style; second, the lamentable fact that through the destruction of the monasteries by Henry's cutthroats, Cromwell, Layton, London and the rest of the "visitors," and his new made and most evil "nobles," to whom the fabulous spoil was granted, most of the very noblest examples of Gothic in England have utterly perished from the earth.

Bearing this first fact in mind we can understand why there never was any one final and finished "Gothic style" in England, *i. e.*, any point of time at which it might be said, "this marks the culmination of an epoch," but rather a swift sequence of brilliant and bewildering episodes wherein were commingled masterpieces and failures, perfect Gothic and sadly imperfect. In this respect France and England stand at opposite poles, and to my mind the Gothic of England was greater and



AN EXAMPLE OF VICTORIAN GOTHIC.

more Gothic, even if far less final in its logical perfection. Gothic as a style maintained, or rather rediscovered, all the subtleties of proportion and composition inherent in Hellenic architecture. It added to these a pure logic of construction and design Rome never grasped, and as well the passion for beauty in an infinity of varied forms hitherto undreamed of by any peoples of

any race or clime; finally, as the culmination of all, it exalted to the summit of its wonderful fabric, *personality*, demanding of every man the supreme best he individually could give, and opening to him every conceivable source of inspiration that might operate to this end. France stopped short at logic of design and construction, and her Gothic is a wonder of consummate consistency; England grasped at personality as the perfect ideal, and achieved it, becoming so the truest exponent of the great mediæval period in building, but failing always to bring any one phase of her art to finality, and so falling under the ban of those the logic of whose minds runs with the logic of the great builders of the Ile de France.

Bearing the second fact in mind, we can see why Eng-

that followed, brought art to an end in England. When that monumental statesman, Elizabeth Boleyn, finally succeeded in bringing something of order out of chaos and giving civilization another chance, there was no longer either a powerful Church, a popular religious instinct or an actual material demand that might act as an incentive toward a rebirth of religious art. The great fire of London under the Stuarts offered a purely fictitious impulse, and it was met by a purely fictitious style devoid of the slightest Christian spirit, and, as well, profoundly artificial through its absolute ignoring of the essential connection between construction and design. It was a mode of enclosing a certain space from the weather and giving the shell a specious grandiosity, but it was not a legitimate architectural style. From



WHAT ENGLAND WAS BUILDING WHEN THE GOTHIC IMPULSE WAS CRUSHED OUT.

lish architecture is at so terrible a disadvantage when it comes to the test of archæology; the most noble buildings are gone, utterly, irremediably. The reign of terror under "Henry the Demon" wiped out the most perfect of the Gothic monuments of England, and by some strange fatality these structures, which reached the level of Paris, Amiens and Rheims, were the very ones to go, while the failures like Salisbury only too often remained. We know this from the fragments of Glastonbury, Rievaulx, Whitby, York and Gisburgh still remaining. What must have been in the case of Beaulieu, St. Edmundsbury, Evesham and Osney, not one stone of which remains upon another, is only matter for sorrowful speculation.

The Suppression, and the half century of anarchy coupled with the swift down-rushing towards barbarism

then on was merely a sorry tale of the progressive degradation of habits in themselves none too exalted, and so matters stood when the elder Pugin became the discoverer of the interesting fact that England had once had a national Christian architecture. The news spread like wildfire. It was synchronous with Scott's revelation of the old-time glory of British character and British history, and the still greater revelation of Pusey, Newman and the Tractarians that England once had had a national, Catholic and virile Church, the dry bones of which still remained, and might perchance be raised up into a new life, a fact somewhat forgotten since the murder, two centuries before, of Archbishop Laud.

Reform was in the air, memory was at work again, imagination roused itself from its long sleep, and art and poetry came out into a new day. But architecture alone

concerns us here, so it is enough to note the fact that the "Gothic revival" in England was not a sport of jaded fashion, but an intrinsic part of a great movement that is even now working steadily towards a destiny, the nature of which we can only conjecture.

The history of the architectural "counter-reformation" was about what we should expect. The younger Pugin, the first Gilbert Scott, Street, Pearson, saw at first only archæological possibilities; the thirteenth century was the idol of the hour, and duplication of detail, copying with scrupulous exactness the ritual of its worship. From this grew up on the one hand the Markheim of "Victorian Gothic," on the other the absurdities of "carpenter's Gothic." Neither was really Gothic at all; but while the latter was the indelible mark of a social barbarism and debasement that would have disgraced the Maories of New Zealand and the savages of Patagonia, the former was not only vastly in advance of anything that had preceded it for two hundred years, it was really good in itself; not very good to be sure, but earnest, enthusiastic and possessed of no small degree of fine proportion and noble and original composition. Of course its ornament, particularly its carving, was quite impossible, but only a social revolution that will bring back the guilds, the methods and the faith of the middle ages will give us back our heritage of architectural sculpture. Until that day it is better to deal with chiseled moldings, or even the contemporary jungle of acanthus.

When Mr. Bodley entered the fight he brought in a new element: not only did he seek his inspiration largely from the fourteenth century, he as well began to indicate the great, underlying laws of the Christian style that run changelessly through all Gothic building from the thirteenth century until the end. Others had worked in the style, he thought in it, and so did those that came after him; as a result his work had the spirit and the life as well as the moldings and the centering of arches. By this time, also, a certain section of the people had begun to *think* Gothic; Scott and Wordsworth and Coleridge, Pusey, Newman and Manning, Ruskin, Turner and Tennyson, were making themselves felt. They had brought into existence, or the *Zeit-geist* had done it for them, such absolute yet varied types of the true artistic Goth as William Morris, Dante Rossetti and Henry Irving. "Strawberry Hill Gothic" would no longer do, for the consciousness had grown up that the new school

of architecture was supremely foolish if it did not express an identical impulse in human life, and this impulse proved as soon as it arrived that shams and lies and affectations and stage scenery were the final negation of the spirit of life that had made mediæval architecture possible, and that had come again into the world, not as a *revenant*, but as a resurrection.

Gradually the consciousness grew up that good architecture and sound civilization did not die of inanition during the reign of Henry VIII, but that they were done to death in most untimely fashion and in the strength of

their mature manhood, and so men said, "Go to, we will return to the year 1537, take up the story where it was then brought to a violent end and go on thence, ignoring for all practical purposes the long interregnum between then and now." The leader in this new crusade for the "redemption of the holy places" of architecture was John Sedding, and, short as was his life, he turned the whole stream of tendency into new channels. Perpendicular Gothic became the enormous quarry from which inspiration was to be had for the digging, and "development" the slogan of the war. The results were brilliant and amazing: a score of able men allied themselves with the cause, and for ten years the output of vital, spontaneous, exhilarating, exquisite work was almost incredible. I shall not attempt to give a list of the names of those associated with this splendid outburst



THE SEVENTEENTH CENTURY SUBSTITUTE FOR ARCHITECTURE, AT ITS BEST.

of genius, for they are legion.

"Last stage of all" came the inevitable — though I believe temporary — breakdown. Sedding died and many of his disciples got out of hand. "Development" was too fast and too facile, it began to see nothing but ingenuity before it, the great principles of Gothic were forgotten in the rush, and there came a carnival of riotous invention. Bentley, in some ways perhaps the greatest of all the new Goths of England, was forced into an alien style for his hugest monument, and presently died, cut off like Sedding and Gilbert Scott II long before his time. Had he lived he might have stemmed the tide.

What remains? Is the cause lost? Has English architecture lived through in seventy-five years a life identical with that which consumed four centuries in its earlier development? Has the Gothic Restoration come to an end? On the contrary, it has only begun. One experiment after another has been tried, the re-creation of the thirteenth, the fourteenth and the fifteenth centuries: each has been only partially successful, and for two

reasons: first, because in each case there was too much dependence on archæology and on the minutiae of art, not enough on sound and basic principles; second, because the architects were far in advance of society, and even in the case of the Church (though here in less measure than elsewhere) were trying to drag the world up to a level for which it was not prepared. The result was a state of things that was bad from an economic standpoint: the supply was creating the demand. There are signs now, clear and unmistakable, that all is reversed: the demand exists, and it must inevitably create the supply. Society, in England at least, will tolerate no return to classicism, whether Italian, French or English. It is now acquiring something to express which can only be accurately voiced by some new mode of its old national style. To fill this demand architects will return, not to one special period, but to all: from the thirteenth century they will learn the laws of proportion, relation, composition and restraint; from the fourteenth, breadth, largeness, grasp of mass, grouping of light and shade; from the fifteenth, freedom, fearlessness, exuberance of imagination adaptation to new and constantly changing requirements; from the three centuries taken together, seriousness of purpose, healthy joy in creation, the passion for pure beauty and a sane, manly, religious faith, confident and unashamed.

In Gilbert Scott III and his Liverpool Cathedral is perhaps an indication of this latest and most lasting phase of the new life in English architecture.

TWENTY-STORY TENEMENT HOUSE.

THE fertile imagination of the real estate promoter has, from time to time, attempted to expand the tenement house in the same degree that the office building has developed, by carrying it out in multiple stories toward the sky. Quite recently it was seriously announced that a twenty-story tenement house was to be built in Brooklyn with the backing of some wealthy New York philanthropist, and even many details were set forth, but we are glad to learn that the report was unfounded and there is no immediate likelihood that tenement-house dwellers will be called upon to expose themselves to the extreme hazards of such a construction.

The tenement house offers a problem which has not yet been solved in a satisfactory manner. The sordid financial interests have generally interfered to prevent

the development of a thoroughly successful treatment of the problem from a practical no less than from an æsthetic standpoint; but the solution will never be reached by attempting to crowd more people into the same space. Some years since the real estate editor of a well-known Boston paper, acting with a young architect, made a careful survey of the most congested district of the North End of Boston, attempting to work out some sort of a building which would accommodate on the same ground area, but in a thoroughly hygienic and sanitary manner, all of the inhabitants which are now crowded in

miserable tenements, on the same land. It was very speedily found to involve carrying the building so high that the scheme became quite impracticable, and was abandoned as hopeless.

Nearly every architect has at times dreamed of constructing a model tenement house, which would be dirt and vermin proof and almost indestructible in its finish, with plenty of light and air and perfect sanitary appliances of every sort. We doubt very much, however, if it would be possible to construct such a tenement house and make it pay even the three and a half or four per cent which capital requires. Certainly this could not be done at the present prices of labor and materials, but it is a problem which every generation will have to meet in the future, and it would seem a proper function of a large city to provide accommodation for the miserable poor, without any hope of ever

more than barely meeting expenses, or even with the probability of an annual outgo, charging up such expense to the necessary sanitary supervision of the city.

PRESIDENT ELIOT, in his recent Buffalo address, urged the necessity of the study of beauty as a factor in modern civilization; and however extended may have been the developments of painting and sculpture in this country, no art has witnessed such extraordinary growth as has fallen to architecture. All the more, therefore, does it behoove architects who are interested to assist the teachers to bring the instruction of architecture as close as possible to architecture itself, to make the theory and the practice consistent and in accord; and, on the other hand, the time has long since passed when architecture can be treated by college authorities as an academic study. It is too closely woven into the fabric of our essentially practical civilization to be studied apart from the definite and very exacting requirements of everyday life.



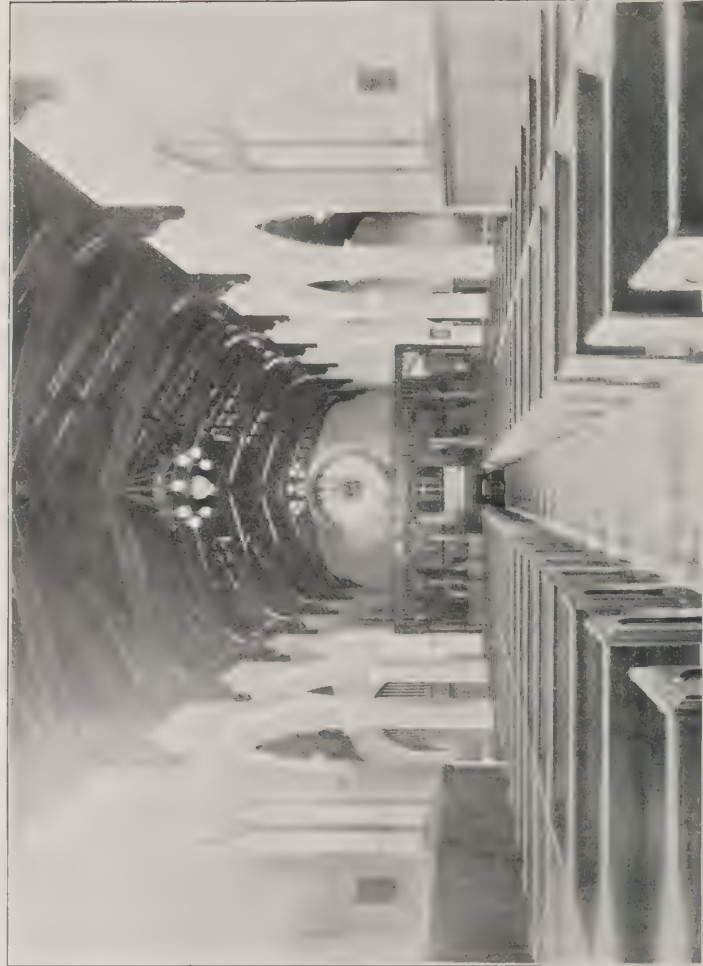
THE SEVENTEENTH CENTURY SUBSTITUTE FOR ARCHITECTURE, AT ITS WORST.



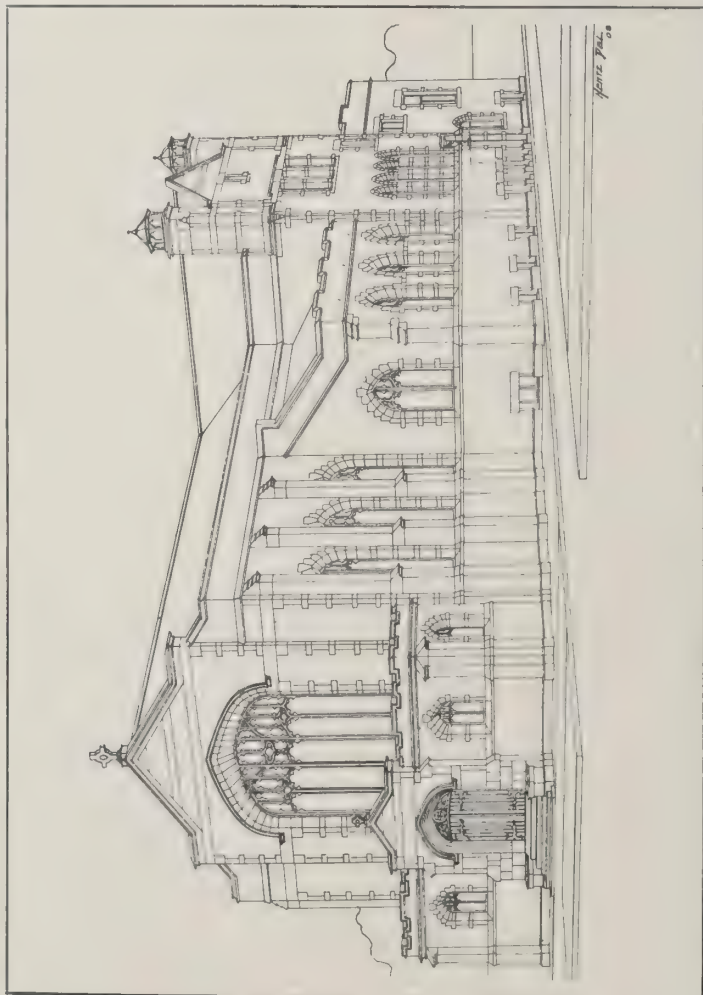
CHURCH OF THE HOLY SPIRIT (EPISCOPAL), LAKE FOREST, ILL. Frost & Granger, Architects.



CHURCH OF THE HOLY SPIRIT (EPISCOPAL), LAKE FOREST, ILL. Frost & Granger, Architects.



ST. PAUL'S EPISCOPAL CHURCH, COLUMBUS, OHIO. Frank L. Packard, Architect.



Boston Brickwork. V.

BOSTON "FLATS."

FROM the fact that Boston, owing to the essential character of its inhabitants, has never become an apartment house town in the sense that New York has, it is not possible to show pictures of any very elaborate examples of this class of buildings. It is probably safe to say that while on the whole Boston apartment houses are as comfortable and as well planned in every way as those of similar classes in the metropolis, the various little modern inventions which make for convenience are more apt to be lacking, as well as the grandiose entrances and elaborate façades which are such important features of New York apartment houses. The nearness and convenience of attractive suburbs have resulted in scattering the population over a wide range of territory outside of the city proper, though a strong tendency to house suburbanites in moderate priced flats is now apparent, the architecture of which, however, will not be discussed in these articles.

Nevertheless Boston apartment houses have an architectural history of their own, not less interesting than that of Boston dwelling houses. Probably the Kensington (No. 72) may safely be taken as a fair example of what happened during the early stages of their development. The wild beasts are a later addition, and their presence on the steps and parapets cannot fairly be attributed to "Queen Anne." The period elapsing between the erection of the Kensington and that of the scholarly building built about 1889 by McKim, Mead & White, on the corner of Charles and Beacon streets, was not long in point of years, but the change in architectural expression might well have required half a century. The latter building is one of the few modern structures which remains an ever increasing solace and delight to the eye among the banalities of more recent days. (No. 73.)

The examples of apartment house façades which follow are selected much at random. It is not possible to show all, and some good ones are doubtless overlooked, but on the whole the selection is probably fairly typical. It will be noted that few are of many stories, and that brick as a wall material is still well to the front.

The Lucerne (No. 74) is a good example of the best of the medium sized houses. The façade, though not in the least original, is pleasing and attractive. The ironwork is not as good as the rest of the front.

The apartment house on Boylston Street by A. H. Bowditch is a good building, with its detail bold and free and well massed and a somewhat swaggering though highly interesting entrance, which hardly seems to belong to Boston. The brick above the lower stories is laid in a strongly marked bond which gives much texture to the wall surfaces. (Nos. 75 and 76.)

Hampton Court, Brookline, W. I. Park, architect, is one of the most recent buildings on the Beacon Boulevard. The façades have a cheerful and invigorating air, but one is tempted to revert to the photograph of the Kensington, with which this article commenced, to try and learn what æsthetic progress, if any, had been made

since its erection. (No. 78.) The beautiful Richmond Court adjoining has already been illustrated in THE BRICKBUILDER.

Brandon Hall, Brookline, Mr. Eastman, architect, is a very good building, Georgian in feeling as well as striking in ensemble, and well above the ordinary run of apartment house work. (No. 79.)

The Beaconsfield, like the two foregoing examples on Beacon Street in Brookline, Fehmer & Page, architects, is a most attractive and scholarly building in stucco with trimmings of cream-colored terra-cotta. As far as architectural dignity is concerned the Beaconsfield is in a class by itself among Brookline apartment houses, although on account of its lowness it is not particularly imposing. (No. 78.)

The three-apartment house built for Judge Dewey by Kilham & Hopkins, on the corner of Beacon Street and Audubon Road (No. 80), is a good example of rational and well balanced English design adapted to modern conditions and well expressing its purpose. The lot is of singular shape and the difficulties appear to have been cleverly overcome.

No. 81 is an apartment house doorway on Beacon Street, Brookline, by Winslow & Wetherell, in limestone and light red pressed Roman brick. Nos. 82, 83 and 84 are of small apartment houses on Audubon Road, and No. 85 of the entrance to the apartment house at 375 Harvard Street, Brookline, by Kilham & Hopkins.

The Cabot, on Mt. Vernon Street, has an extremely pleasing façade in the usual limestone and red brick. The bay windows are well handled. (No. 86.)

No. 87 is of the courtyard entrances of the Technology Chambers by Kilham & Hopkins, a large building devoted to students' lodgings. The scheme is simple but well adapted to its purpose, and the building is very effective, especially from the courtyard side.

At the present time no very important apartment house work is being built and no critical discussion of architectural tendencies can be entered upon. The flats which are being constructed are nearly all in the line of small buildings, mostly of three stories, located in the outlying parts of the city. When not built of wood these structures are commonly built of ordinary red brick, and on account of their smallness and the rapidity with which they are erected very little architectural terra-cotta is used in their construction. The larger buildings have, however, in the past few years made quite ample use of architectural terra-cotta. Besides those illustrated in this article, the building known as the Westminster Chambers on Copley Square, being probably the most conspicuous example, and some of the earlier buildings, such as the Victoria on Dartmouth Street, were elaborately ornamented with terra-cotta in Moorish and other ornate styles.

Fancy bonds or special methods of laying front brick are not common, due probably to distrust of the value of the investment. On the whole, Boston apartment houses lack grandeur and impressiveness. The stories are low and the interiors simply laid out and fitted up. Undoubtedly a modification in the building laws would result in great extension of apartment house work, but the present regulations militate strongly against it.



72. THE KENSINGTON, AN EARLY APARTMENT HOUSE.



74. THE LUCERNE.



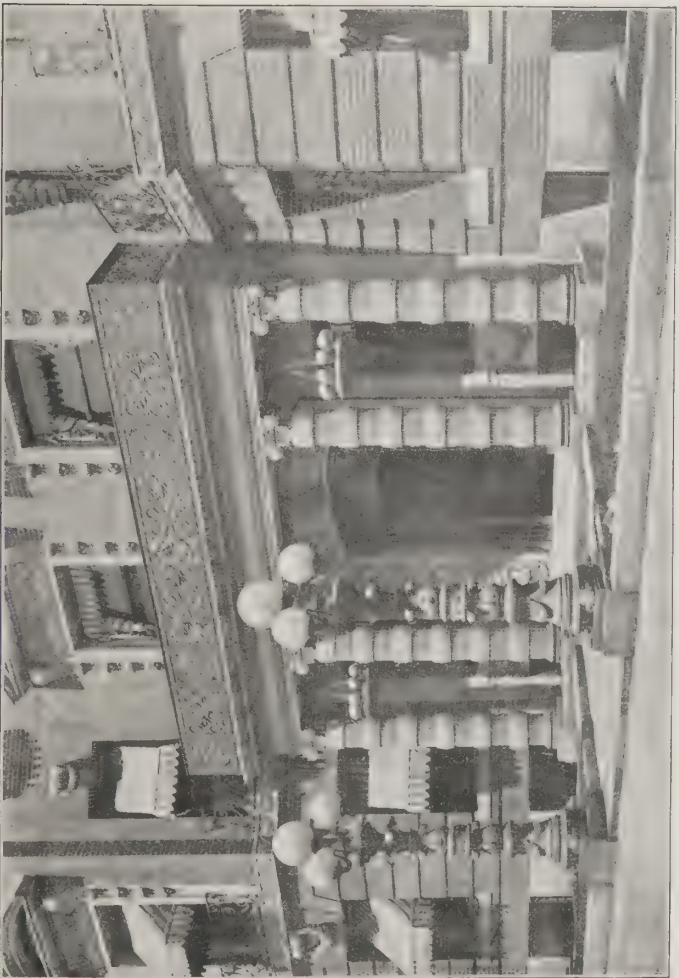
73. APARTMENT HOUSE, CHARLES AND BEACON STREETS.
McKim, Mead & White, Architects.



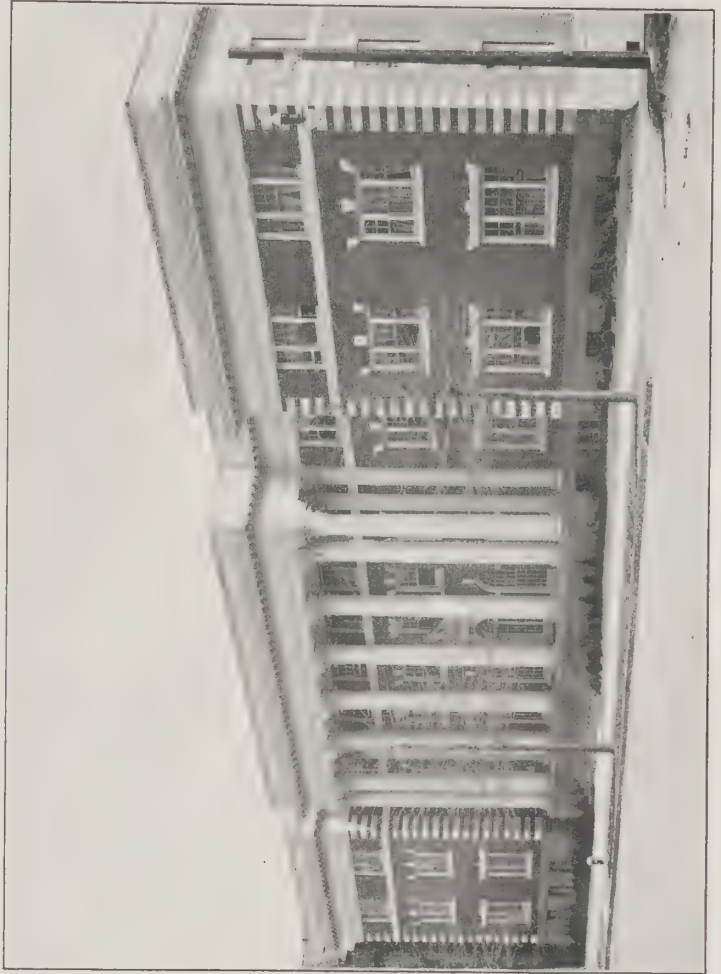
75. APARTMENT HOUSE, BOYLSTON STREET.
A. H. Bowditch, Architect.



77. THE BEACONFIELD, BROOKLINE. Fehmer & Page, Architects.



76. ENTRANCE, APARTMENT HOUSE, BOYLSTON STREET. A. H. Bowditch, Architect.



79. BRANDON HALL, BROOKLINE. Mr. Eastman, Architect.



78. HAMPTON COURT, BROOKLINE. W. I. Park, Architect.



80. THREE-APARTMENT HOUSE, BEACON STREET.
Kilham & Hopkins, Architects.



81. ENTRANCE, APARTMENT HOUSE, BROOKLINE.
Winslow & Bigelow, Architects.



82. SMALL APARTMENT, AUDUBON ROAD.



83. SMALL APARTMENT, AUDUBON ROAD.



84. ENTRANCE, APARTMENT HOUSE, AUDUBON ROAD.



86. THE CABOT, MOUNT VERNON STREET.



85. ENTRANCE, APARTMENT HOUSE, BROOKLINE.
Kilham & Hopkins, Architects.



87. ENTRANCE, TECHNOLOGY CHAMBERS.
Kilham & Hopkins, Architects.

The New Post Office at Stockholm, Sweden.

BY O. Z. CERVIN.

A LITTLE more than a year ago, in the fall of 1903, a notable structure was finished in the North,—the new post office of Stockholm, Sweden, a modern building for a modern purpose. It is of brownish yellow brick with reddish sandstone trimmings, harmonizing very happily. A public building of brick in Sweden is quite an exception, especially one as important as this is.

The architect, Ferdinand Boberg, is one of the group of brilliant architects and artists of Sweden, now in the very prime of life, no longer young, yet far from old. His selection was the result of a competition conducted in 1898 in the most approved manner. It was a close competition, and in one respect rather peculiar. The architects were practically confined to a plan that had been worked out by the Post Office Department, after most careful study of the local condition and of similar buildings abroad, especially in Germany. To what extent this added to the difficulties of the solution, or perhaps, for that matter, simplified it, is an open question, depending much upon the architect's own point of view. It is quite certain that Boberg has more than succeeded in fitting a front to the plan, he has expressed a plan evolved by the mind of another.

If the architect found an initial difficulty in being tied to a preconceived plan, there was perhaps another



THE NEW POST OFFICE AT STOCKHOLM, SWEDEN.
Ferdinand Boberg, Architect.

and greater in the location. Much of the city of Stockholm is on the checkerboard style of streets. The site selected fronts on a moderately wide street and on two narrow side streets. To European architects, at least, this seems a most unfortunate condition,—no open space in front, no line of sight, hardly anything better than the street corner diagonally opposite. But he has done something to give a little more breathing space and to give a semblance of dignity to his structure in its very

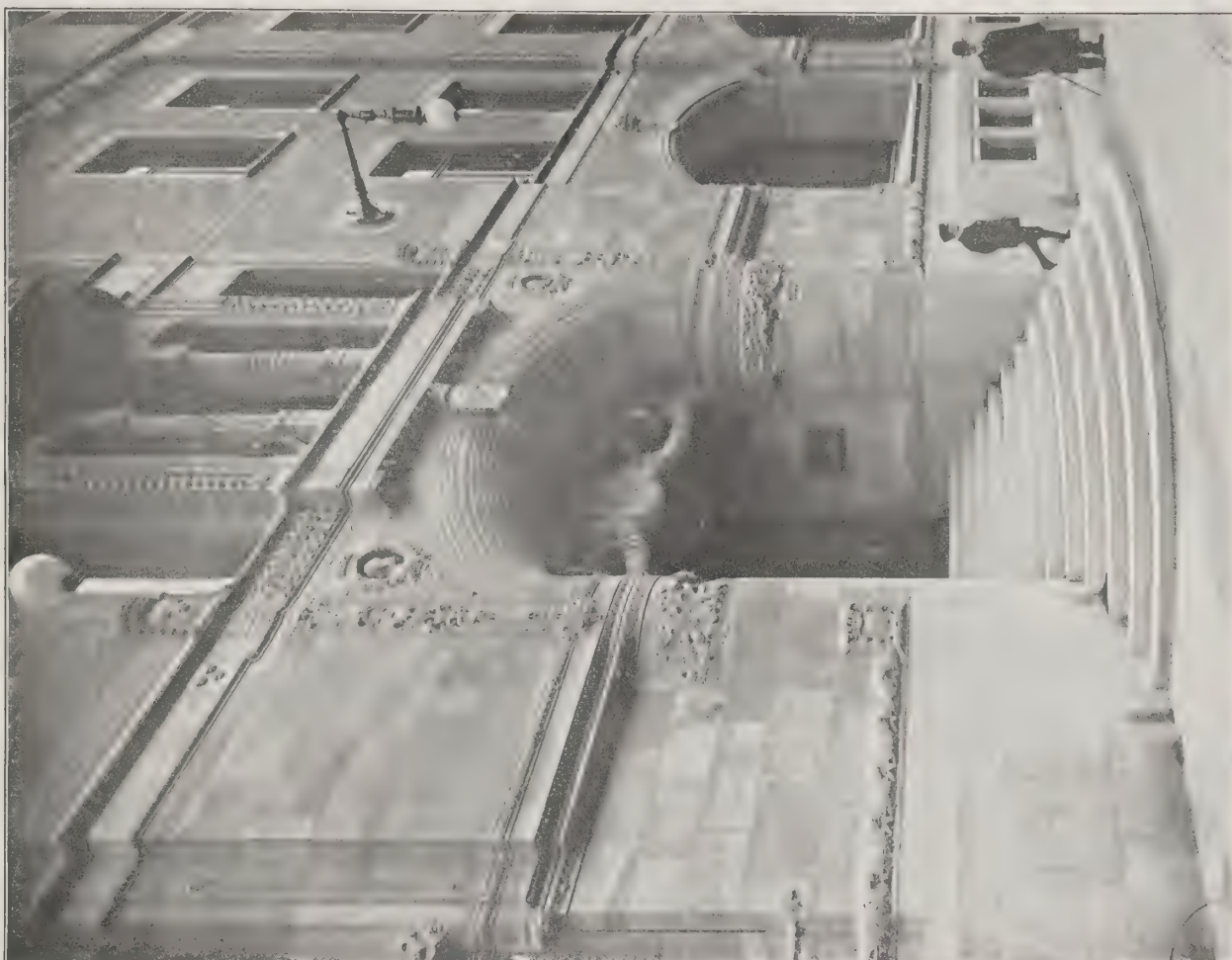
location. The corner pavilions are on the street line, and the wall line is set back a few feet. In this way space is gained for the steps which emphasize the entrance, and the sidewalk broadened along the whole front. This might seem a small matter, but the gain is really great.

Then too it must have been the narrow street that influenced the architect to keep his tower so low. It is hard to see what would have been gained by making this kind of a tower higher. As it now stands it looks sturdy and reliable.

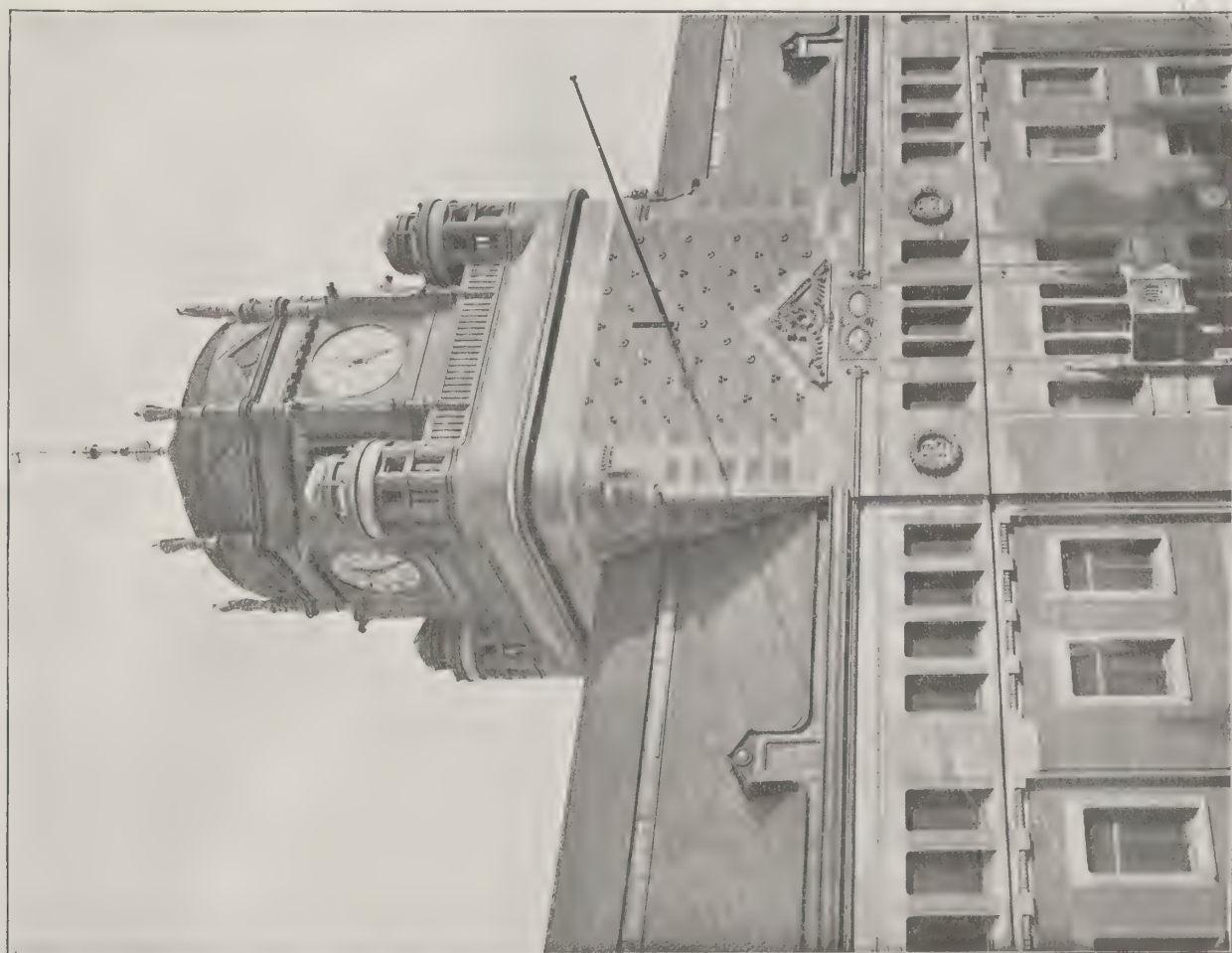
The plan is very successful.



DETAIL OF WINDOW, POST OFFICE.



DETAIL OF MAIN ENTRANCE, POST OFFICE.



DETAIL OF TOWER, POST OFFICE.



DELIVERY ROOM, POST OFFICE.

There are two courts, at the bottom of which are the work spaces. The delivery room is directly opposite the tower and the same width. It is two stories in height and receives its light through clerestory windows, above the roof of the work space on both sides. This arrangement is shown by the view of the interior. To the visitor there is a free view in all directions, the delivery room being arranged in the open manner of a modern bank, with even a minimum of railings. On either side of the vestibule are two rooms: in one the ordinary American lock box, quite a novelty here, but growing rapidly in popularity; in the other room is the telegraph office, this as well as the post office being a state institution. Perhaps the most striking features of all are the corner entrances in the slightly projecting round pavilions. It was a bold and clever thing to place the stairways here. The public has nothing to do with these, and in spite of their prominent position the architect has succeeded in subduing them so there is no confusion. It was undoubtedly not the easiest of the problems to "work in" the landings so as to fit with the rest of the front, and yet not appear to be at loggerheads with the other openings. A closer study will show how skillfully this is done, there is no jar whatever.

The long break in the middle of the roof, with little slits of windows admitting light to the attic, is quite peculiar. It is the last remnant of the clerestory of the mediæval churches. The history of the suppression of the clerestory has, to my knowledge, not been written, but it can be clearly traced. Reduced from time to time, it at last appears as a mere break in the roof, a

shadow line without any openings in three-aisled churches, disappearing altogether at last, and then resurrected, it occurs on single-aisled churches as a mere decoration. From these it has been borrowed for the country chateau. The modern architects of Sweden make constant use of it, sometimes for mere looks. It is perhaps the most distinctive single feature in the architecture of the country.

The corner pavilions have also a distinct historical flavor, suggestions from the grand old chateau of Gripsholm. But the central tower

could have originated only in Boberg's brains. For that matter, it is all his. Whatever suggestions the architect may have received, he has so thoroughly transmuted them that it is now typically and only Boberg.

ENTRANCE TO ELECTRIC STATION, STOCKHOLM.
Ferdinand Boberg, Architect.

But it is in the decoration that we find him at his best. He is, so to speak, the Swedish Louis Sullivan. He is no imitator, and furthermore he has himself few if any imitators. Perhaps this is because it is more difficult to say just what characterizes his work, for he has not confined himself to conventionalizing and appropriating one particular form of leaf decoration. He conventionalizes everything that comes his way, and fits them all into his own delicate scheme of decoration with a rich and ever varying fancy. One marvels that the main lines of his buildings are so restrained and kept within architectural limits when compared with the free play he allows his pencil in the ornamental details. And perhaps in this respect the post



ENTRANCE TO A BANK, STOCKHOLM.
Ferdinand Boberg, Architect.

office has been justly criticised, that the ornamental parts are too fine, too delicate to be lasting. Time will show them no mercy. Fortunately the building has other qualifications, and even if the delicate ornament will disintegrate as the years wear on there will still remain the fine structure, bold and yet reserved, with a flavor of royal dignity that fits it well.

It is a modern building for a modern purpose, from foundation to cresting pulsating with the life of to-day, and yet delicately linked with the past; willing to do homage to bygone ages, but first and always with the avowed purpose of serving the present day and its people.

Two other illustrations of Boberg's work are added. One is the entrance to a new bank. The main motive of decoration is the pennies radiating from the arch and the money bag on each side into which the pennies are lustily dropping. Another is the entrance to the city electric office. Here the architect has used the ordinary glow lamp in a most effective and decorative manner in three combinations.

Editorial Comment and Selected Miscellany

THE FIREPROOF HOUSE COMPETITION. AWARDS BY THE JURY.

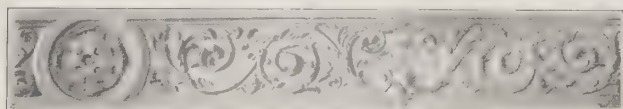
THE jury for the Fireproof House Competition has awarded First Prize (\$500) to B. C. Flournay, Supervising Architect's Office, Washington, D. C.; Second Prize (\$200) to Henry Brooks Price, 28 East 21st Street, New York City; Third Prize (\$100) to Joseph W. Wilson,



WALL FOUNTAIN EXECUTED IN COLORED MATT GLAZE
FAIENCE BY ROOKWOOD POTTERY CO.

44 Seeley Avenue, Chicago, Ill. Mention was given designs submitted by Gordon B. Pike and William L. Welton (associated), New York City; Walter E. Pinkham, Washington, D. C.; Russell Eason Hart, New York City, and W. Pell Pulés, Boston.

The members of the Jury of Award were William



DETAIL BY ST. LOUIS TERRA-COTTA CO.
George R. Mann, Architect.

Rutherford Mead, William A. Boring, Arnold W. Brunner, J. Monroe Hewlett and John Russell Pope, all of New York City.

The Prize Designs with the report of the Jury of Award will be published in THE BRICKBUILDER for July.

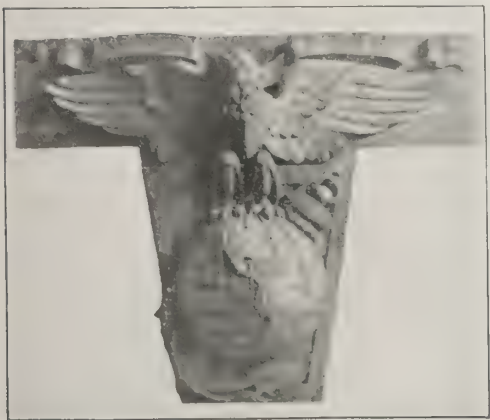
INTELLIGENT DEVELOPMENT OF
CONSTRUCTION.

THIS is an age of specialists. The enormous development of the building interests, the application of business methods to the production of building materials,



POTTERY FOR A FORMAL GARDEN.
Made by Grueby Faience Co.

manufacturers. The consequence is that our constructive methods are very apt to develop ruts which seriously interfere with the best species of growth and development, and the need of the architectural profession to-day is individuality, more willingness to attack the problems



DETAIL BY EXCELSIOR TERRA-COTTA CO.
Price & de Sibour, Architects.

have very naturally resulted in the elimination of individual incentive from many lines of work. The architect in planning a new structure now finds his steel work calculated before him in advance in the pages of the handbooks issued by the great steel companies. He can also have a choice of construction from any one of several methods fully set forth in trade catalogues, and so on through the whole list he may, if he chooses, draw the greater portion of his so-called practical details directly from information supplied by

us, with an unbiased mind and a greater freedom from mere dependence upon specialists. This need is made especially apparent when one studies the constructions which have developed so remarkably of recent years in

connection with modern commercial buildings, and whatever fault is fairly found with existing materials and methods is more chargeable to the lack of personal incentive on the part of the architect or engineer than to unwillingness or inability on the part of manufacturer.

The latter have often led where they would be glad to follow; and if designers should demand better methods and better material the results would undoubtedly be vastly more interesting than what follows now from our simple acceptance of commercial methods. We depend to-day altogether too much upon the syndicate and the catalogue.

There is probably no one material which offers such great possibilities as burnt clay in its various modifications. An eminent educator recently made the statement that America would become a burnt clay built



DETAIL BY CONKLING-ARMSTRONG TERRA-COTTA CO.

Neff & Thompson, Architects.



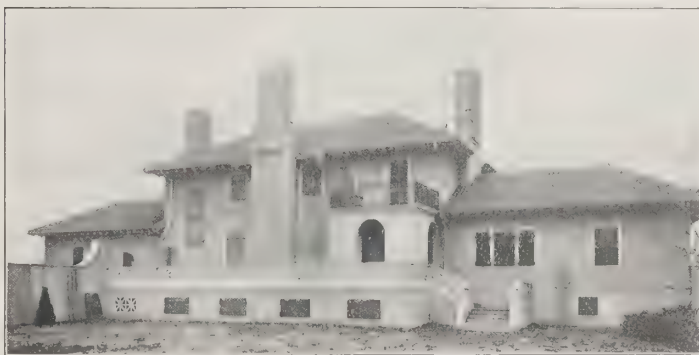
HOUSE OF NATHAN MEYERS, ARCHITECT, NEWARK, N. J.



EDISON BUILDING, WEST NEWTON, MASS. Winslow & Bigelow, Architects.

country; and if we study the building situation carefully and consider how fast has been the growth of the terra-cotta and brick industries, it would certainly seem that the burnt clay period for this country is rapidly announcing itself. It is pre-eminently the medium possessing great capacities for decorative treat-

ment and, at the same time, lending itself naturally and successfully to pure construction. We have the natural material in abundance. We have some excellent specialists and manufacturing companies who are putting it on the market to the very best of their ability, bringing to it the best of engineering skill, but working

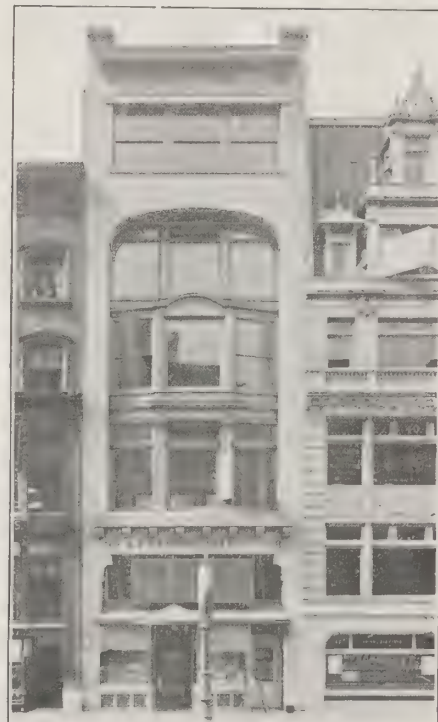
DETAIL BY ATLANTIC TERRA-COTTA CO.
Brainerd, Leeds & Russell, Architects.HOUSE AT COHASSET, MASS.
John Lavalley, Architect. Roofed with Ludowici Tile.

after all to a certain extent in the dark, because the shapes of the material are determined in advance, without that reference to the particular building which would be desirable under the best conditions.

Consequently

in our use of terra-cotta fireproofing we are too prone to accept conditions as they are in the commercial market, and do not give the material the individual study which alone can insure the best kind of success. We look for the

time close at hand when the demand for structural terra-cotta will be as large as that which is so rapidly growing and has developed so extensively for exterior work; and with so flexible a material, the well-nigh universal use of the burnt clay products will be the logical outcome of our improved methods and machinery, if only the same care and study are given to the details that would naturally be expended on steel, stone or concrete. We

STORE AND LOFT, WEST 34TH
STREET, NEW YORK.

Built of Kreischer Brick.
Robert D. Kohn, Architect.

must cut wood out of the list of materials suitable for building operations in large cities, and burnt clay is the natural successor thereto.

VALUE OF CLAY PRODUCTS.

ACCORDING to the statistics filed by the United States Geological Survey, the value of the clay products for 1904 amounted to \$131,023,248, made up as follows:

Brick, tile and the coarser products..\$105,864,978

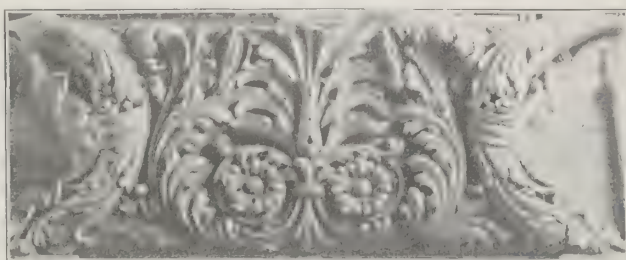
Pottery and the finer products..... 25,158,270

These figures are practically the same as those of 1903.



DETAIL BY NEW JERSEY TERRA-COTTA CO.

Facts which the statistics do not give, however, are concerned with the remarkable development in the artistic quality in many of the clay products. There has been a quantity of some very interesting enameled brick and terra-cotta put on the market during the past year, and the success which has attended these efforts has shown how large a demand there is for really first-class products. The extensive use of burnt clay in the New York Subway has given a marked impetus to the demand, and the enameled tiles and terra-cottas now at the disposal of the architects were never so varied in possibilities and so sure in treatment as at



DETAIL BY NORTHWESTERN TERRA-COTTA CO.
James M. Wood, Architect.



INTERIOR OF PUMPING STATION, BOSTON.
Finished in Jewettville Red Pressed Brick. Fiske & Co.,
New England Agents.



HOUSE AT WHEELING, W. VA.
Roofed with American "S" Tile. Made by Cincinnati
Roofing Tile and Terra-Cotta Co.
N. A. Olston, Architect.

present. As the burnt clay products constitute fully one-half of the value of all the products which go into modern building, the importance of these industries can hardly be overestimated.

Colored terra-cotta is beginning to make its appearance in many forms. We have had a great variety of enamels which have been used with much success, both in the glazed and semi-glazed finish, but quite recently there have been some very satisfactory attempts at using colored slips over a soft terra-cotta body to produce decorative effects for panel treatments, friezes, pilasters, etc. The possibilities of such treatment are large. The choice of colors at first seems very restricted, and any palette in which a good clear yellow and a strong red are lacking must necessarily be kept very quiet in tone, but this fact makes the result rather the better and precludes some of the glaring

effects which operated so strongly against the use of colored terra-cotta when it first made its appearance twenty or thirty years ago.

The use of sprayed terra-cotta or slip for constructive work has not on the whole produced effects desired, but for decorative treatments, especially when used in interior work, the softest and most harmonious results can be obtained at a minimum cost and with a permanence of effect which is not equaled by any other material.

IN GENERAL.

Brooks Frothingham has been admitted to the firm of Fehmer & Page, architects, 87 Milk Street, Boston.

Dwight Heald Perkins has been chosen as Supervising Architect for the Board of Education of Chicago.

The designs for a Masonic



DETAIL BY BRICK, TERRA-COTTA
& TILE CO.
Charles & Bailey, Architects.

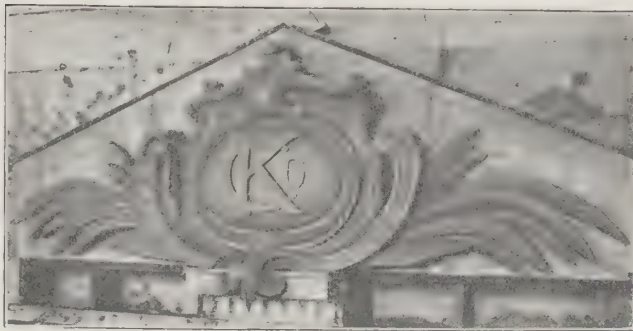
Temple to be built in Brooklyn, submitted in competition by Lord & Hewlett, have been placed first by the Jury of Award.

George B. Post & Son have won in the competition for the Washington University group at Washington, D. C.

The new engine house of the Grand Trunk Railway Company at Deering, Me., is being treated with Cabot's Red Brick Preservative, for waterproofing and coloring. The company used the Preservative last year on their new Montreal buildings with very satisfactory results.

Mr. G. P. McDougall, head of the firm of G. P. McDougall & Son, Indianapolis, Ind., deserves credit for instituting a competition that will unquestionably focus attention of architects all over the country on the needs of the average kitchen.

The McDougall Idea is to lighten the labor of the housewife, to make life easier for her, to save her innumerable steps and unnecessary work. In calling upon the architects to help him to carry out this idea, Mr. McDougall has made no mistake, for he is appealing to



DETAIL BY AMERICAN TERRA-COTTA & CERAMIC CO.
Julian Barnes, Architect.

the highest ideals of the profession, and at the same time is making it worth while for members of the profession to realize their ideals.

The judges for the Competition are so well known that their very names are a guarantee that the awards will be made, not only with absolute impartiality, but on a basis of genuine artistic merit.

Architectural terra-cotta made by the Brick Terra-Cotta & Tile Co., Corning, N. Y., will be used on the following new buildings: Oneida County Courthouse, Utica, N. Y., Cutter, Ward & Turner, architects; State College of Agriculture, Cornell University, Ithaca, N. Y., George L. Heins, architect; Stevenson School Building, Pittsburg, Pa., J. B. Elliott, architect; Grammar School Building, New Haven, Conn., Brown & Von Beren, architects; Public School No. 23, Staten Island, N. Y., C. B. J. Snyder, architect; Sailors' Haven, Charlestown, Mass., Allen & Collins, architects; National Bank Building, Wellsville, N. Y., York & Sawyer, architects; North Woodward M. E. Church, Detroit, Mich., Kastler & Hunter, architects; addition to Second Presbyterian Church, Paterson, N. J., H. T. Stephens, architect; Carnegie Library Building, Rockhill, S. C., J. McMichael, architect; Kenesaw Apartments, 16th Street and Kenesaw Avenue, Washington, D. C., Stone & Averill, architects; apartment, 127th Street and Claremont Avenue, New York City, Neville & Bagge, architects; Y. M. C. A. Building, Niagara Falls, N. Y., Seymour Davis & Paul A. Davis, architects.

WANTED — Suitable draughting space and a small private office in the offices of a New York architect, between Thirtieth and Forty-second Street, New York City, by two New York architects of known standing. Address "Uptown," care of "The Brickbuilder."

WANTED — Two good draughtsmen, one a general designer, one good at detailing. Good positions for the right men. Those with technical training preferred. Address George B. Rogers, Fidelia Club Building, Mobile, Ala.

WANTED — Architect desirous of locating in enterprising southern town wishes to hear from parties willing to sell out. State price, reason for selling and details of business done. Address "Adam," care of "The Brickbuilder."

THE SCHOOL OF ARCHITECTURE

University of Pennsylvania.

THE FOUR YEAR COURSE offers full professional training, with an option in Architectural Engineering, leading to the degree of B. S. in Architecture.

THE GRADUATE YEAR affords opportunity for advanced work in design and other subjects, leading to the degree of M. S. in Architecture.

THE TWO YEAR SPECIAL COURSE offers advanced technical training, yielding a Certificate of Proficiency.

THE UNIVERSITY also grants advanced standing to College graduates; offers a combination of liberal and technical courses whereby the degrees of A. B. and B. S. in Architecture can be taken in six years, and conducts a Summer School in which architectural studies may be taken.

For full information address

DR. J. H. PENNIMAN, DEAN, COLLEGE HALL,
UNIVERSITY OF PENNSYLVANIA,
PHILADELPHIA, PA.



BEAVER BUILDING, BEAVER AND WALL STREETS,
NEW YORK CITY.

Cass Gilbert, Architect.

Built of buff brick (with speckled buff for trim). Made by Ohio Mining & Manufacturing Co. The upper stories are in colored terra-cotta, made by Perth Amboy Terra-Cotta Co.

INDOORS AND OUT

Is the name of a new monthly magazine

Devoted to Art and Nature

TREATING OF

ARCHITECTURE as a factor in beautifying the earth, as shown in the best examples of every kind of structure for the shelter and comfort of man, especially THE DESIGNING, PLANNING, FURNISHING AND DECORATING OF THE HOME.

Landscape Architecture and Gardencraft.

Civic Art in every phase.

Regions of the beautiful and picturesque in the old world and the new.

The fine and applied arts.

The betterment of modern life by improving its environment.

The part of beauty in the progress of to-day and to-morrow.

The magazine will be published by Arthur D. Rogers and Herbert C. Wise, under the name of

ROGERS AND WISE
COMPANY.

The first number will be issued October 1, 1905.

Price \$3.00 yearly.

25 cents a single copy.

To those ordering subscriptions for 1906 — if order is accompanied by cash and received by October 1, 1905 — will be given free the numbers for October, November and December, 1905.

Competition for a Cover Design

The publishers offer a cash prize of One Hundred Dollars for the best cover design submitted in a competition, which shall be open to all, and governed as follows:

THE DESIGN. Shall be 15 x 20 inches and rendered suitable for reduction to 9 x 12 inches. It shall be on white paper or cardboard measuring exactly 21 x 28 inches. It shall be suitable for printing in two colors (which may be suggested by the competitor), and must bear the following lettering only:

INDOORS AND OUT

A Monthly Magazine Devoted to Art and Nature.

SUGGESTION. A space may be provided in the design for inserting an illustration. This feature is not necessary.

THE DRAWINGS. Must be delivered flat to Rogers and Wise Company, 85 Water Street, Boston, on or before July 15, 1905. Each drawing must bear a device, and accompanying it is to be a sealed envelope also bearing this device and containing the author's full name and address.

JUDGMENT. The Competition will be judged by two architects and one illustrator.

AWARD. The author of the design placed first will receive One Hundred Dollars.

In addition to this there will be three mentions, as follows:

First Mention.

Second Mention.

Honorable Mention.

The prize drawing will become the property of Rogers and Wise Company, who reserve the right to purchase, at the price of \$25.00, any of the other designs submitted, and also to exhibit all designs.

All drawings, except the prize drawing and those purchased, will be returned if a sufficient amount is enclosed in the sealed envelope containing the author's name to cover cost of carriage.

85 Water Street, Boston, Mass.

ROGERS AND WISE COMPANY.

THE BRICKBUILDER.

VOL. 14

JULY 1905

No. 7

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FROM WORK OF WILLIAM A. BORING, LORD & HEWLETT, McCLURE
& SPAHR, McKIM, MEAD & WHITE, WILLIAM B. TUBBY & BRO.

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CASTLE OF PILATOS, SEVILLE, SPAIN.

THE BRICKBUILDER

VOL. 14 No. 7 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY JULY 1905

THE BRICKBUILDER.

PUBLISHED MONTHLY BY

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Architectural Faience . . .	II	Clay Chemicals	IV
“ Terra-Cotta	II and III	Fire-proofing	IV
Brick	III	Machinery	IV
“ Enameled	III and IV	Roofing Tile	IV

Advertisements will be printed on cover pages only.

THE PRIZE WINNERS IN THE FIREPROOF HOUSE COMPETITION.

WINNER OF FIRST PRIZE.

BEN CORTLAND FLOURNOY, twenty-nine years of age, was graduated in 1897 from Washington and Lee University, and in 1901 took a course in Architecture



BEN CORTLAND FLOURNOY.

at Washington University, Washington, D. C. Some of his engineering experience was obtained in the offices of the Bridge Engineer of the N. Y. C. & H. R. R. R., while most of his architectural experience has been obtained in the offices of the road's Supervising Architect, in which he has been the last five years. Mr. Flournoy recently designed the new dormitory at Washington and Lee University. He is at present connected with the Supervising



HENRY BROOKS PRICE.

Architect's office at Washington.

WINNER OF SECOND PRIZE.

HENRY BROOKS PRICE, thirty-two years of age, received his early training in the offices of Joseph Evans Sperry, Baltimore, Md. The years 1895-1898 he devoted to study at the Ecole des Beaux Arts and to European travel. Since his return to New York City in 1898 he has been con-

nected with the firms of Howard, Caldwell & Morgan and Warren & Wetmore, besides practising independently. At present he is with Hunt & Hunt, New York City.

WINNER OF THIRD PRIZE.

JOSEPH W. WILSON, twenty-seven years of age, was graduated from the School of Architecture, University of Illinois, in 1903, and as a fellow in architecture received his M.A. degree the following year. Ever since graduation he has been connected with the firm of Nimmons & Fellows, Chicago, Ill.



JOSEPH W. WILSON.

Ecclesiastical Architecture.

PAPER V.

THE UNITED STATES.

BY RALPH ADAMS CRAM, F. A. I. A., F. R. G. S.

FEW of the joys of the spirit are more thoroughly pleasurable than the indulgence in vain imaginings as to what might have happened had matters otherwise befallen: if Luther had possessed a more perfect control of his temper; if Henry VIII had been less expensive in his tastes and less expansive in his marital impulses; if Oliver Cromwell had been permitted to emigrate to America when still a young man; if Blücher had failed to come up in time at Waterloo; if Jackson had not fallen at Chancellorsville; if the "Maine" had sailed



ST. MICHAEL'S, CHARLESTON, S. C.

A Typical Telescopic Effect.

scathless from Havana Harbor; if Russia had refrained from robbing Japan of Port Arthur ten years ago.

The vistas opened by each supposition are illimitable, and the possible list is practically without bounds. Add yet another: suppose the exodus from England "for conscience' sake" had been dated just a century before. Assume that the revolt had been against the last Henry of the house of Tudor instead of against the first James of the house of Stuart. There was infinitely greater cause, for in the early fifteens a war to the death was going on between the true and the false, the sane and the mad, exponents of the Renaissance. By 1520 the cause of the sound defenders of the "new learning" was already lost, and it was quite evident that the victory would lie with Henry, Cranmer and Cromwell, not with

Archbishop Wareham, Bishop Fisher, Sir Thomas More and Erasmus.

Now suppose that then such pilgrims as these had forsaken a crumbling civilization and come out to preserve in the new world the exalted traditions and principles of mediævalism revived by all that was good in the Renaissance. Wareham was dead, and Erasmus, before the great *débacle*, but there were many indeed who would have followed More and Fisher, and what might they not have accomplished? One thing very surely: they would have brought to the new world all the architectural force and fire that

were still extant when the sixteenth century began its course, and we should have had here, as our dearest artistic treasures, churches built in the great Christian style, which might by their beauty have proved a bulwark against the subsequent fashions that were to arise in England when the foundations of society had been overturned and art, as an instinct, had ceased to be an appanage of the race.

Well, the exodus was delayed another hundred years. More went to the block, the Benedictine abbots to the



CHRIST CHURCH, BOSTON.

A Note of Thrifty Severity.



CHRIST CHURCH, ALEXANDRIA, VA.

A Southern Type of the Eighteenth Century.

scaffold and their principles with them. When at last the transfer from East to West was made there was nothing left of the architectural tradition, and the fashion of building that was transplanted to America was that which had been devised by ingenious men as a plausible exponent of the new reign of classical culture.

In the recrudescence some years ago of loud admiration for "Colonial," or, as it should be called, "Georgian" architecture there was, I think, a failure to sufficiently analyze emotions. The building fashion of the seventies and early eighties was of course unendurable, and the frank simplicity and unquestioned good taste in detail of the early eighteenth century work was a welcome relief from the riotous reign of the jig saw. A fine pride in history was coming into being, and we confused archæol-



ST. JOHN'S CHAPEL, NEW YORK.
The Full-blown Georgian Type.

ogy and the historic sentiment with artistic assent. The building that had taken place in what are now the United States up to the Revolution was worthy of all respect. It possessed certain elements in its domestic and civil aspects that were sound and true; it was quite as good as, if not better than, what was being done at the time in England, for it was frank and simple and restrained; but this fact should not blind us to that other of equal importance, viz., that the good was due to a dying instinct for good taste, not to the style itself, which really possessed no qualities of sound principle or absolute beauty.

It was all artifice and imitation; many of its best qualities were the result of tricks of memory; sense of scale was curiously persistent, but of feeling for proportion and composition there was little, while the sense of organic relationship had utterly disappeared.

We feel this particularly in the church work of the Colonial period. Little from the seventeenth century



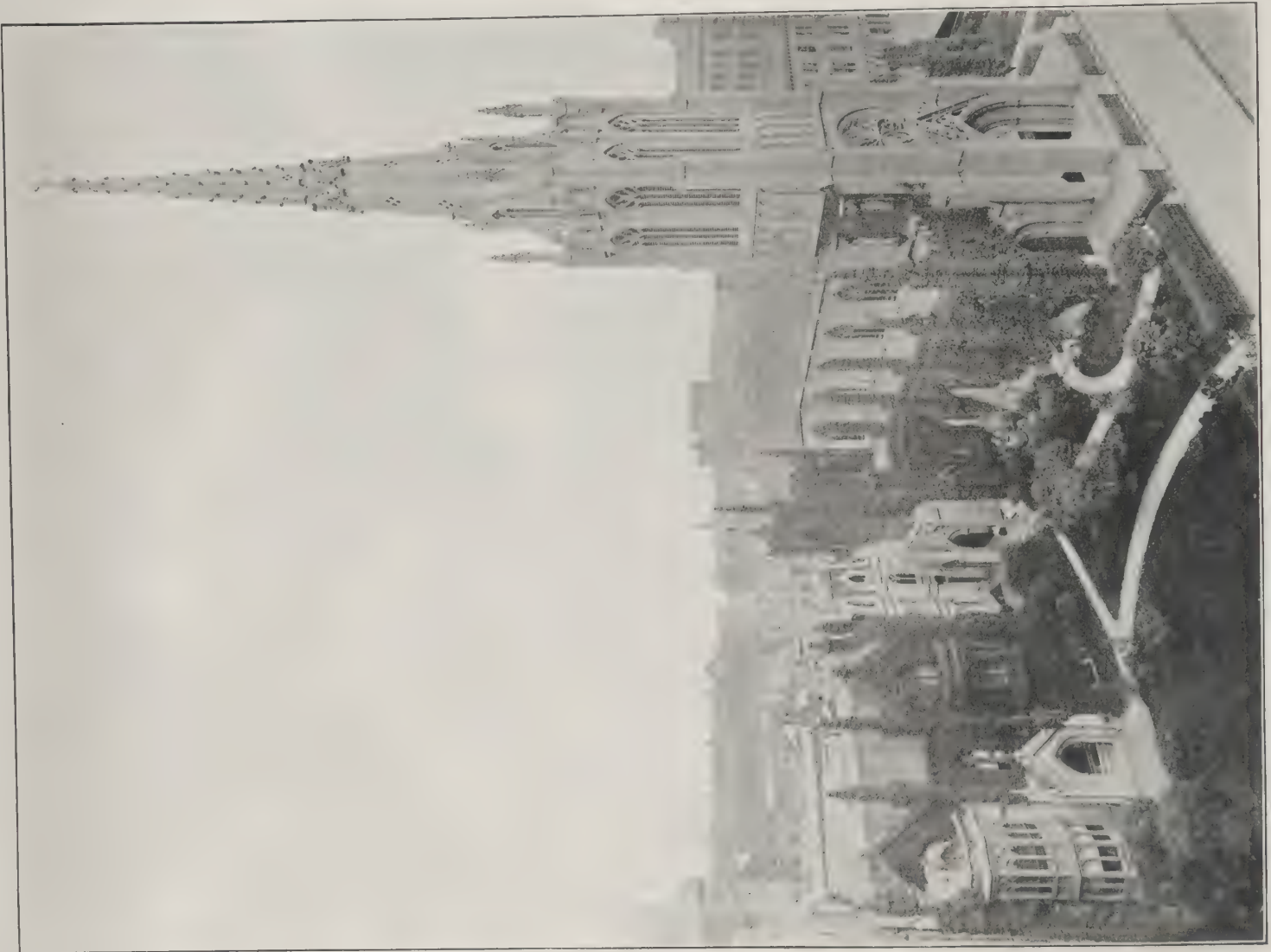
A SURVIVAL FROM THE SEVENTEENTH CENTURY.

remains,—a crag at Jamestown, one or two "Swedish" churches in Delaware, St. Luke's, Smithfield, Va., this last dating from 1632, and retaining a pathetic reminiscence of Gothic in its square tower, stepped buttresses and pointed windows. The churches and meeting-houses of the eighteenth century are legion, but whether they are of the rough country type so familiar to us in the villages of the East and South, of the cautious and thrifty fashion shown in Christ Church, Boston, or whether they approach the elaborate and magnificent, as in Christ Church, Philadelphia, they are all singularly artificial and unimaginative; a square room with galleries on three sides, with or without Corinthian columns of wood, silly entablatures and groined vaults of lath and plaster. Sometimes a massive classical portico of flimsy construction is backed up against one end of the primal cube, and almost invariably an imposing tower, of foolishly diminishing stages, telescopes itself into the upper air. It is the "volapuk" of Wren and Inigo Jones and their school retranslated into the vernacular, nothing much remaining but a very pretty taste in delicate detail and the profound and underlying devotion to economical makeshifts.

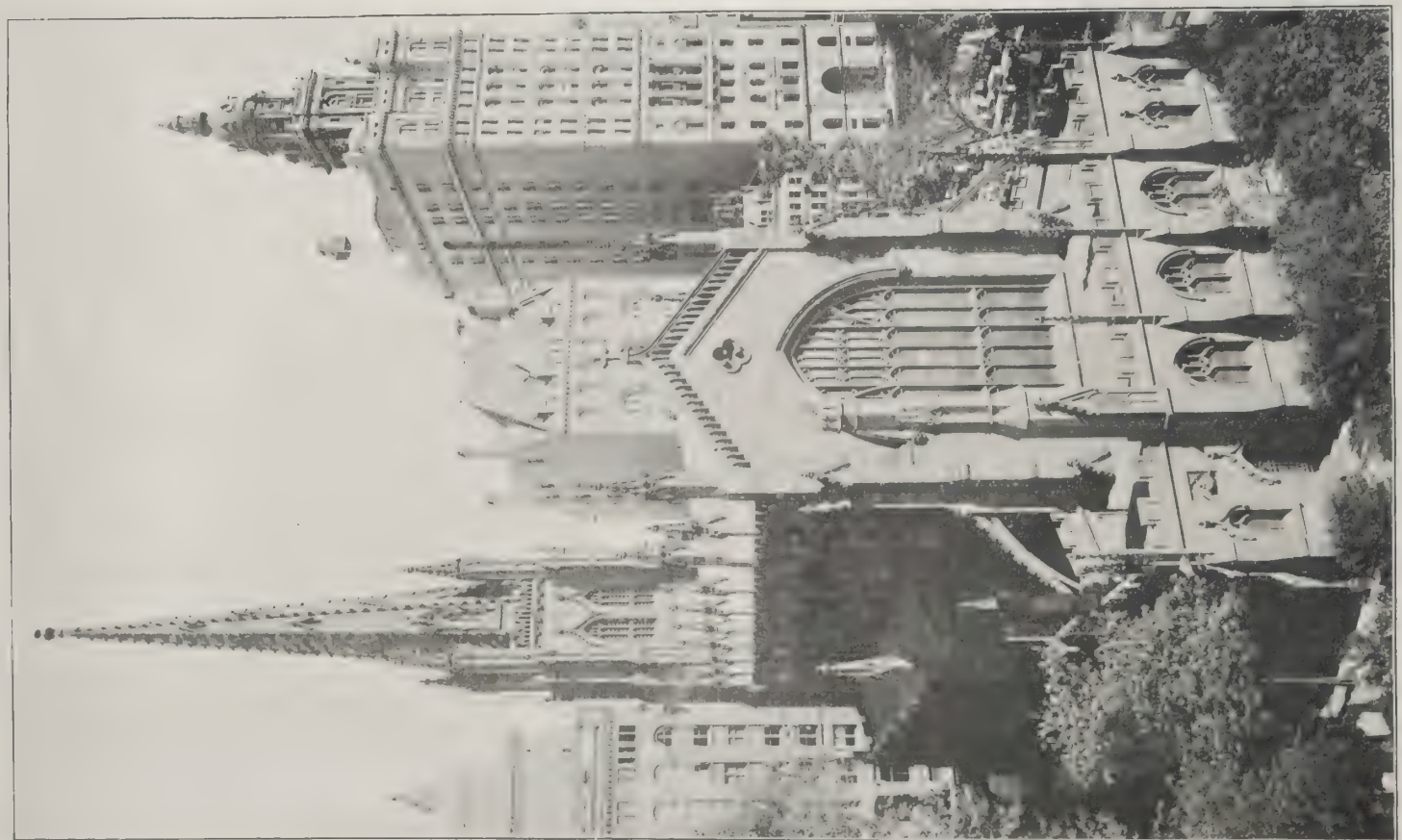
With the early nineteenth century came several more educated builders and an influx of spirit from France and England. Latrobe, Thornton, Bulfinch, McComb, Peter Harrison and scores of others did their best to improve



ST. PAUL'S CHAPEL, NEW YORK.
The Cheerful Artifice of Colonial Times.



GRACE CHURCH, NEW YORK.
The Renwick Version of the Upjohn Propaganda.



TRINITY CHURCH, NEW YORK.
The Beginnings of Good Gothic in America.

proportions and develop design, though always on the established lines. Jefferson, hot with the new French passion for "pure classic," brought in the most absurd fashion of all, that of copying Greek and Roman temples



ST. THOMAS'S, HANOVER, N. H.
Gothic in Form and Feeling.

in economical materials and making them do service as Christian churches. It would seem that the reign of pure pretence could go no further, but there was one step, the evidences of which still remain, viz., the building of a clapboard shanty and then applying to the front a ponderous "Doric" portico with pillars four feet in diameter and built up of seven-eighths inch boards nailed together, the whole being painted white, green blinds shading the lofty windows in the slab sides.



GRACE CHURCH, NEWTON, MASS.
A Serious, Thoughtful Effort.

Here we stood about 1835, or lay, rather, prostrate in our total collapse from the days of Ralph of Glastonbury, William of Canterbury and William of Wykeham. Thus far had we fallen from the fifteenth to the nineteenth century; from Gloucester Cathedral to St. Paul's, Boston.

There was no pit of further fall, and radical change was inevitable. The Gothic revival had begun in England under the Pugins, and it promptly found its echo

here. I should like to know which was the first church that showed a dawning consciousness of Gothic as the Christian style. St. Stephen's, Philadelphia (1822), Christ Church, Louisville, Ky. (1823), and St. Luke's, Rochester (1824), were certainly amongst the pioneers. So ingrained had become the spirit of architectural deceit and artistic substitution, the first "Gothic" work was just as specious and silly as that which it had come to destroy. The general forms and the materials remained the same, the windows became pointed and took to themselves ridiculous mullions and grotesque tracery of patched-up wood; sharp spikes took the place of balls and urns; shapeless chunks of pine were split out and nailed on all available angles in simulation of crocketing; angled spires took the place of the honored telescope effects. Otherwise there was no change. Honestly, I suppose there is no more awful evidence of rampant barbarism than that which exists in the architecture of the United States between the years 1820 and 1840.

Then came Upjohn, a great man, a sound architect, a leader when the time was clamorous for such an one. Trinity Church, New York, marks the end of an era, the birth of an epoch. Upjohn knew what Gothic meant, he



TRINITY CHURCH, NEWPORT, R. I.
An Early Hint of Gothicism.



CHRIST CHURCH, PORTSMOUTH, N. H.
Showing a Fine Feeling for Composition.

felt it as an inspiration, he began at the right end and he fixed a style for three generations. Of course nothing he did can be compared in any way with the product of the great thousand years, but the fault was not his. By some miracle he got Gothic feeling into his work and induced the backward public to accept it. From the moment Trinity was built the reign of paganism was at an end.

Also he raised up a line of able disciples that carried on his work year after year: Renwick, who loved French



THE NEW OLD SOUTH CHURCH, BOSTON.
A Good Type of Devoted Study.

Gothic as Upjohn loved English; Upjohn the younger, Withers, Congdon and many others of the same enthusiasm, though possibly less well known. The greater work of these men fails at many points, for it is too studiously imitative, but in their smaller churches there is a frank simplicity, a grave directness, a sincerity and a dominant love for all they did that make such churches as St. Mary's, Burlington, N. J., St. Mark's, Mauch Chunk, Pa., Grace Church, Newton, Mass., St. Thomas's, Hanover, N. H., Christ Church, Danville, Pa., and Christ Church, Portsmouth, N. H., milestones in the progressive development of good architecture in the United States.

So complete had been the downfall of so-called classical methods in church design, so strong and permanently good had been the style developed in its place, it really might have seemed that the day of good building had begun. There was one fact, however, that showed how unstable was the basis on which architecture was building,—the life did not extend beyond the ecclesiastical province. From 1830 to 1880 domestic architecture in the United States became, and continued to be, worse

than at any time or in any place recorded in history, while the public architecture of the time is well represented by the awful output of the government's pet, the late Mr. Mullet. There was no general recognition of the depravity of the situation; here, as in England, a few strong men with Upjohn as leader, had furnished a supply and so brought

into existence a fictitious demand. I say "fictitious," for the Church was quite as likely to accept a perfectly awful piece of work so long as it called itself "Gothic" as it was to employ Upjohn or Renwick or Congdon. Now the first leaders were getting old; Congdon, Haight and others were still operative, but a restlessness developed, a demand for something new. Just at this crisis came the sudden weakening, both in England and America, which may, I think, be traced in a measure to the writings of John Ruskin. Here was a man of stupefying ability, an extraordinary species of artistic Calvinist, invincibly dogmatic, narrow as Geneva, honest, enthusiastic, inspiring, and quite the worst critic and exponent of architecture that ever lived, but gifted with a facility in the use of perfectly convincing language such as is granted to few men in any given thousand years. Fired by his inflammatory rhetoric, Blomfield, Butterfield and others in England and a particular group in America turned to detail and decoration and the use of colored bricks and terra cotta, stone inlay, naturalistic carving, metal work, as the essentials in con-



THE WEIRD "GOTHIC" OF THE FIRST
AMERICAN PRACTITIONERS.



THE ROMAN CATHOLIC CATHEDRAL, BALTIMORE.
The Scholarly Classic of M. Latrobe.

structive art, abandoning the quest for effective composition, thoughtful proportion and established precedents that had characterized the work of their immediate predecessors. Potter, Eidlitz, Sturgis, Furness and Hunt, all began the laudable labor of developing Gothic on new lines, and others followed them — at a distance — as has always been, and always will be the case. To me it seems that of this school John Sturgis alone succeeded to any marked degree; his New Old South Church in Boston, while poor in mass and proportion, being a very remarkable example of the enthusiastic and conscientious study of creative design, particularly in detail and decoration.

he had influenced were weak men,— they are amongst the strongest who are practising to-day,— but simply because his was an alien style, out of touch with our race and time, intrinsically aloof from our blood and impossible of ethnic adaptation. The principles he fought for are established, for they are the universal laws that underlie all good architecture, classic or Gothic. The language in which they were clothed was an accident, ephemeral and transitory.

In ten years we had turned in derision from those who were making a mock of "Romanesque," and the question came, what next? It was promptly answered. While



"AMERICAN ROMANESQUE." The Beginning.

The new work did not meet the demand, however; the movement was discredited for a while both in England and America, and at the psychological moment Richardson burst on the land with his Trinity Church in Boston. He had begun his career on established Gothic lines; suddenly Trinity leaped from his amazing brain, and from that moment the Gothic structure, already toppling dangerously, was doomed to complete destruction.

Richardson was certainly an architect to be ranked with the immortals. He grasped his art with both hands; he devoured and assimilated it as Michael Angelo sculpture, as Leonardo painting, as Wagner music, as Browning poetry. He forged his mighty way across his brief span of years, drawing the continent after him; but when he died the style he had made his own died also, and in ten years it had become a byword, not because the men

we had been toiling over random ashlar, vast voussoirs and cavernous reveals, Bodley and Sedding had been solving the final problem in England, and their revelation was brought to us by several men, chief of whom is Mr. Vaughan. Mr. Haight and Mr. Congdon had held steadfastly to their ideals through the Richardsonian era, as had others. Mr. Gibson came forward with his scheme for Albany Cathedral, and of a sudden sprung as it were out of the ground half a dozen young firms who began to work in Gothic, and think in it as well. Simultaneously another group began to come back from Paris with the new gospel according to the Beaux Arts, but the style they brought with them was so manifestly unsuited for religious purposes that they took no interest in this field of design, which so was handed over *in toto* to the "Gothic crowd."



"AMERICAN ROMANESQUE."
The Beginning of the End.

And so matters stand to-day, the field of architecture unhappily divided into two camps, secular and ecclesiastical, the style of each intolerant of the other and, it would appear, impossible of compromise or amalgamation. Of this "Kulturkampf" and of future possibilities I mean to say a word in the next and concluding paper.



"AMERICAN ROMANESQUE."
The End.

The Fireproof House Competition.

REPORT OF THE JURY OF AWARD.

THE undersigned Committee, having carefully examined the various designs submitted in competition for a fireproof house, of which the programme appeared in the issue of *THE BRICKBUILDER* for March, 1905, have decided that the First Prize should be awarded to the design submitted by "Vassy" (B. C. Flournoy); the Second Prize to the design submitted under the device of a hollow fireproof block inclosed in a circle and two squares (Henry Brooks Price); and the Third Prize to the design submitted under the symbol of "Tau Beta Pi" (Joseph W. Wilson). Mentions have also been awarded to the four designs by "Fornax" (Gordon B. Pike and William L. Welton), by "Commuter" (Russell Eason Hart), by "Humus" (W. Pell Pulis), and by "Juniperre Serra" (Walter E. Pinkham).

The programme calls for a house, the walls, floors and partitions of which are to be of terra cotta hollow tile blocks, and its expressed object is to encourage ingenuity and resource in the employment of structural clay products in an artistic, practical and inexpensive manner, and to bring out designs expressive of the materials employed.

The design to which first prize has been awarded, while lacking in the interesting study of detail shown in the drawing given second prize, represents a well-proportioned building entirely possible of construction within the limits of cost mentioned in the programme and showing in its detail a logical and pleasing use of the materials available. The simple treatment of the terra cotta cornice and its moderate projection beyond the wall, together with the horizontal stringcourse and the treatment of the quoins and arches over the doors and windows, stamp it unmistakably as a burnt clay construction in which the use of stucco has merely been resorted to as a covering for certain portions of the wall and not as a concealment of the structural facts.

The design awarded second prize is the only one which indicates a thorough appreciation on the part of its author of the primary objects of this competition. Both in general design and in detail it shows intelligent study of the decorative possibilities of the rough structural materials prescribed for the building, and from that standpoint it is regarded as the most meritorious of the designs submitted, in most of which the actual structural materials are concealed for the most part by a covering either of stucco or brick. In spite of the fact, however, that it stands alone as a successful solution of the primary objects of the competition, it is so obviously in excess of the cost limitation of the programme, both in size and in the scope of its composition, as to be debarred from consideration for the first prize.

The drawing to which third prize has been awarded, while equally successful as a design for an inexpensive building of this character, fails to give any adequate exterior expression to the materials of its construction. In fact, it might be readily constructed of wood and wire lath. The prize that has been awarded to it, therefore, represents rather an acknowledgment of the general excellence of the design than a tribute to its success in meeting the particular requirements of this competition.

The same remark would apply to all those designs to which mentions have been given, which, moreover, are for the most part obviously in excess of the cost limitation.

It may be added that the design submitted by "For-nax," to which a mention has been awarded, is architecturally the most interesting of all those submitted. In size and general composition it is well within the limits of cost established, but its lavish use of highly enriched "architectural" terra cotta renders it inappropriate under the programme for consideration as a prize design in this competition.

In conclusion it should be said that, while this competition has brought out many designs of considerable architectural merit, the result is, in some respects, disappointing, in that there are but few among them all showing any decided resource in the utilization of materials which are rich in interesting decorative possibilities.

WILLIAM RUTHERFORD MEAD,
WILLIAM A. BORING,
ARNOLD W. BRUNNER,
J. MONROE HEWLETT,
JOHN RUSSELL POPE,

Jury of Award.

(Publishers' Note : The designs given mentions will be illustrated in THE BRICKBUILDER for August.)

ESTIMATED COST OF HOUSES SHOWN IN THE THREE PRIZE DESIGNS.

[These figures were submitted by the designers.]

FIRST PRIZE DESIGN.

ESTIMATED COST OF CONSTRUCTION.

Excavation.....	\$50.00
Concrete footings and cellar floor.....	150.00
Structural terra cotta.....	4,218.00
Architectural terra cotta.....	312.00
Roofing tile.....	450.00
Rough cast (outside walls) and plastering.....	550.00
Tile floors in hall, kitchen, pantry and bathrooms	360.00
Metal work, tin roofing, etc.....	150.00
Structural steel.....	60.00
Wood framing and sheathing for roofs.....	350.00
Finished carpentry.....	1,300.00
Hardware, painting and glazing.....	250.00
Plumbing.....	750.00
Heating.....	750.00

Total cost.....\$9,700.00

Substituting steel framing for wood in roof, add.. 250.00

Total cost with steel roof framing.....\$9,950.00

SECOND PRIZE DESIGN.

ESTIMATED COST OF CONSTRUCTION.

"The cost to build the design herewith submitted, in the vicinity of New York, is estimated to come within the proposed limit of \$10,000.

"This estimate is based on information received by me to the effect that a house of proposed character can be built for from 17 to 18 cts. per cu. ft.

"Also from figures and price lists received by me from manufacturers of proposed material and figures received for interior finish, heating, plumbing and lighting, viz.:"

SHELL:

Outside Walls:

8-inch T. C. Bldg.	
Blocks with 4-inch	
furring, 3,792 sq.	
ft. at 30 cts.....	\$1,137.60
8-inch brick with	
4-inch furring, 714	
sq. ft. at 32 cts...	228.48 \$1,366.08

Floors:

Johnson system long span	
T. C. Arch, 5,916 sq. ft.	
at 30 cts.....	\$1,774.80

Partitions:

6-inch, 3,705 sq. ft. at	
12 1/2 cts.....	\$463.32
4-inch, 1,142 sq. ft. at	
11 cts.....	125.62
3-inch, 355 sq. ft. at	
10 1/2 cts.....	37.28 \$626.22

Porches:

9,596 cu. ft. at 15 cts	\$1,439.40
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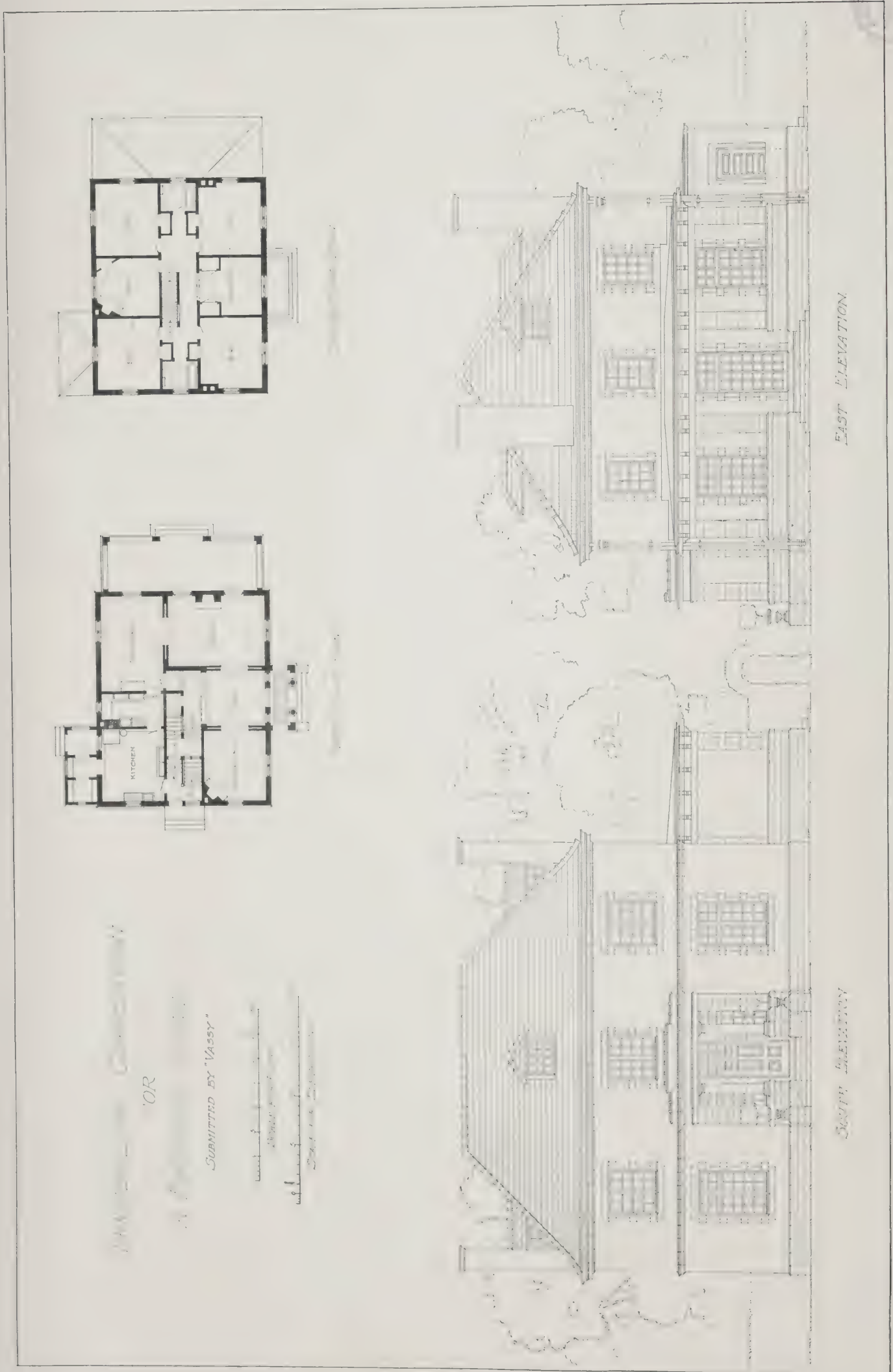
Roof:

10,353 cu. ft. at 15 cts.....	\$1,552.95 \$6,759.45
Interior finish.....	1,425.00
Heating.....	425.00
Plumbing.....	400.00
Lighting.....	225.00
Incidentals.....	765.55
Total cost.....	\$10,000.00

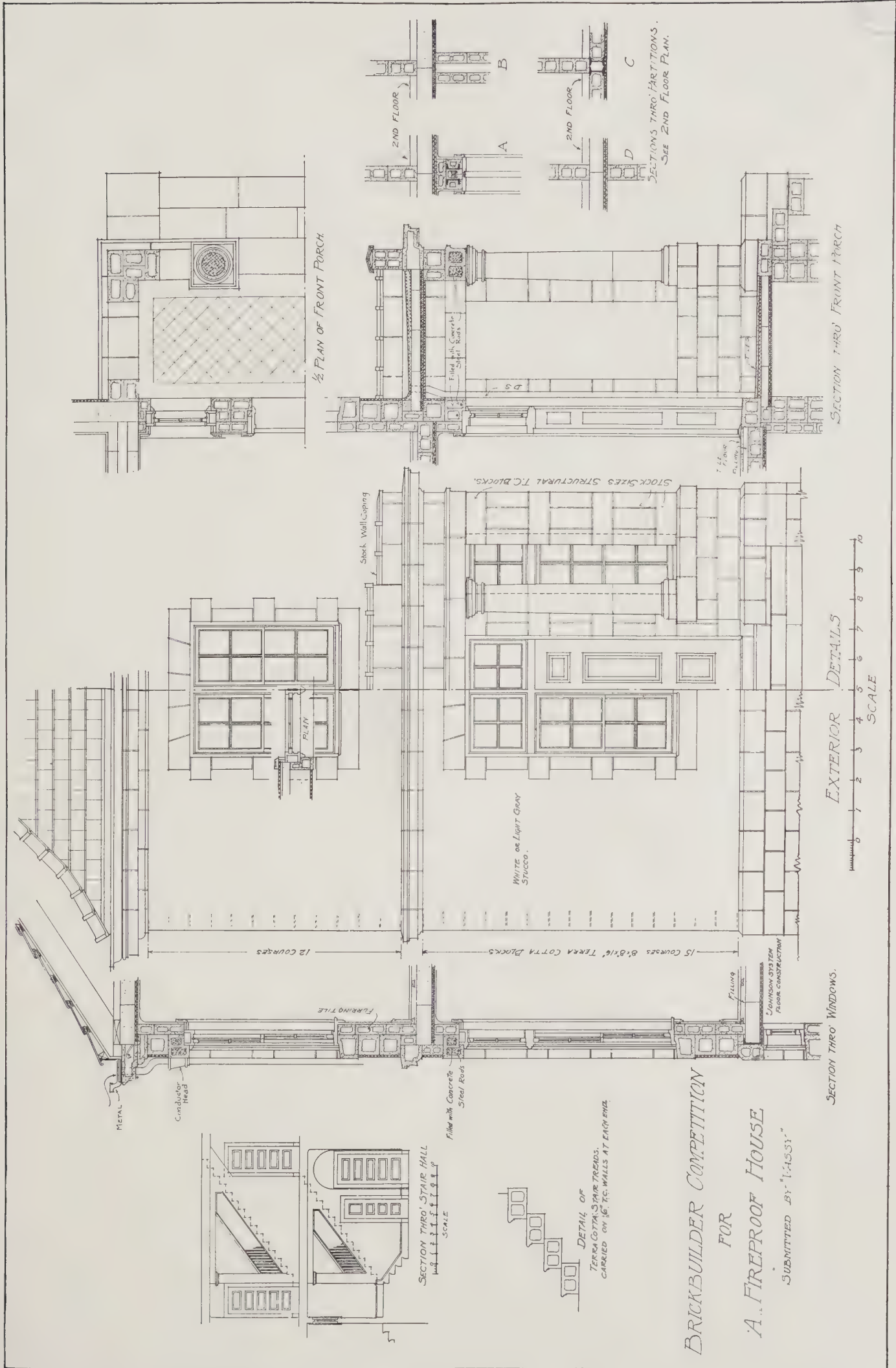
THIRD PRIZE DESIGN.

ESTIMATED COST OF CONSTRUCTION.

Excavating.....	\$195.00
Basement floor.....	175.50
First, second and third floors at 20 cts.....	883.00
Outside walls.....	1,406.00
Inside walls.....	622.50
Terraces.....	150.00
Plastering outside.....	250.00
Plastering inside.....	553.00
Mill work.....	2,240.00
Painting and glazing.....	300.00
Metal bar glass.....	175.00
Plumbing.....	980.00
Hardware.....	150.00
Fixtures.....	150.00
Electric wiring.....	125.00
Heating.....	990.00
Sheet metal and roofing.....	445.00
Roof framing.....	150.00
Total cost.....	\$10,000.00

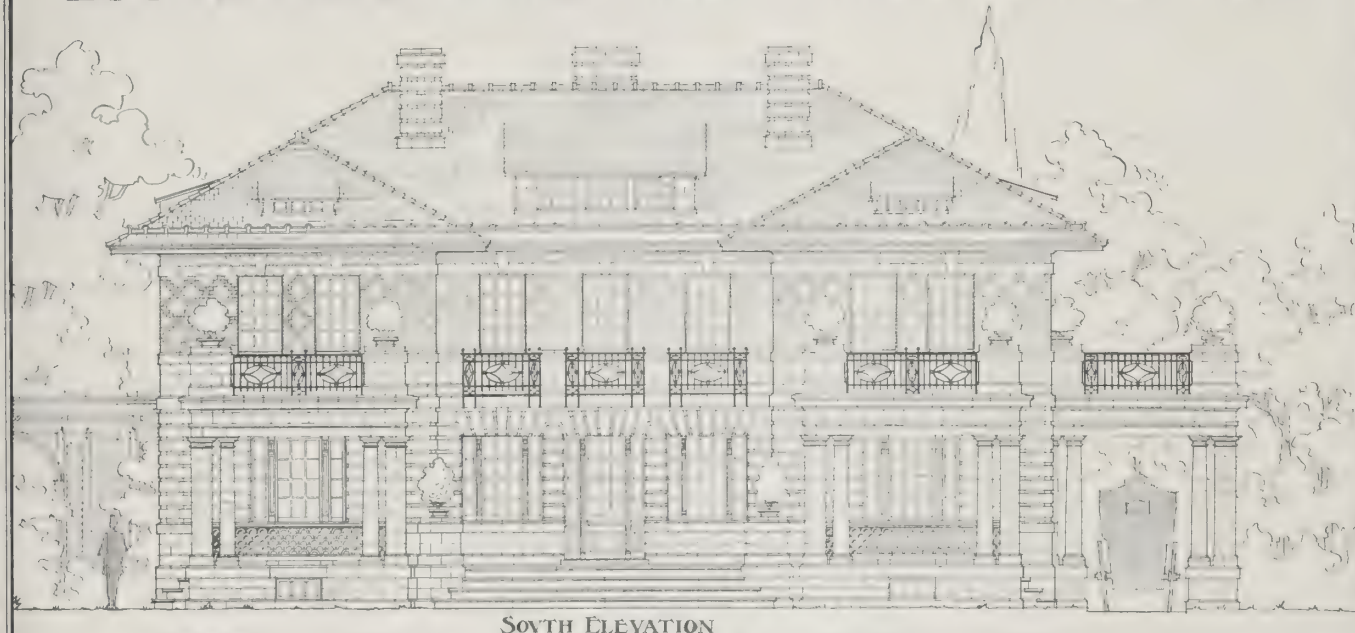


• FIRST PRIZE DESIGN. SUBMITTED BY E. C. FLOURNOY, WASHINGTON, D. C.

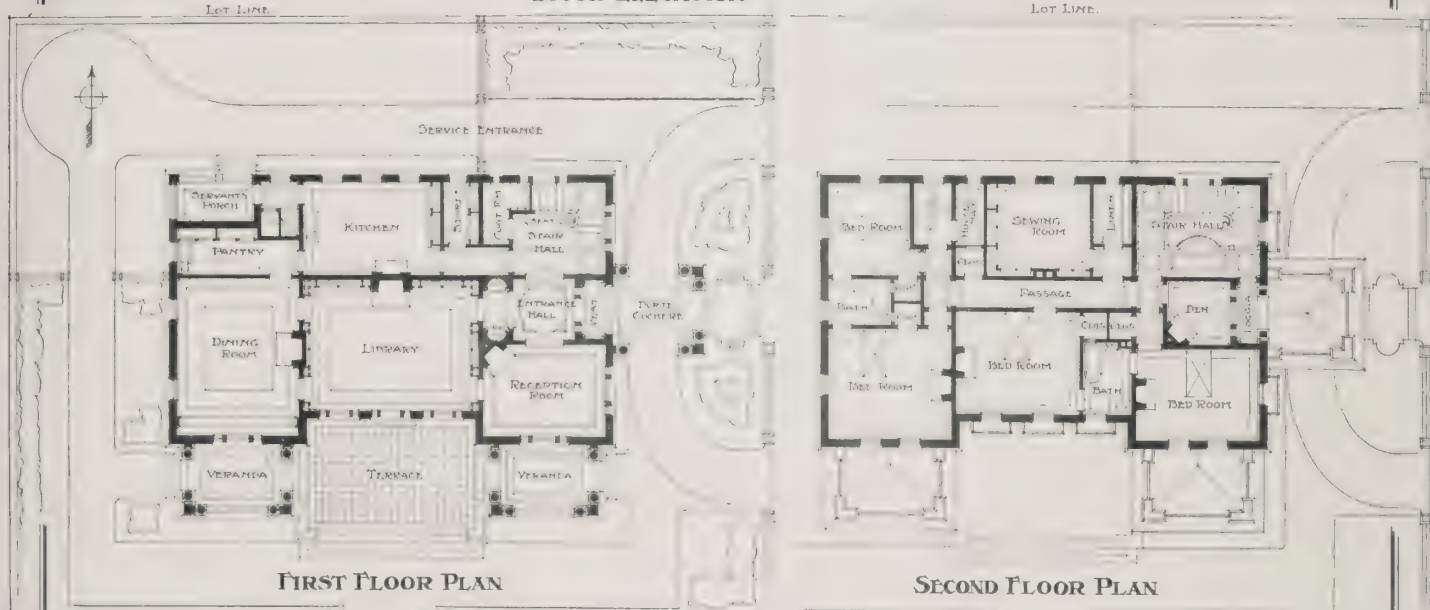


DETAILS BY B. C. FLOURNOY.

BRICKBUILDER FIRE PROOF HOUSE COMPETITION.



SOUTH ELEVATION



FIRST FLOOR PLAN

SECOND FLOOR PLAN



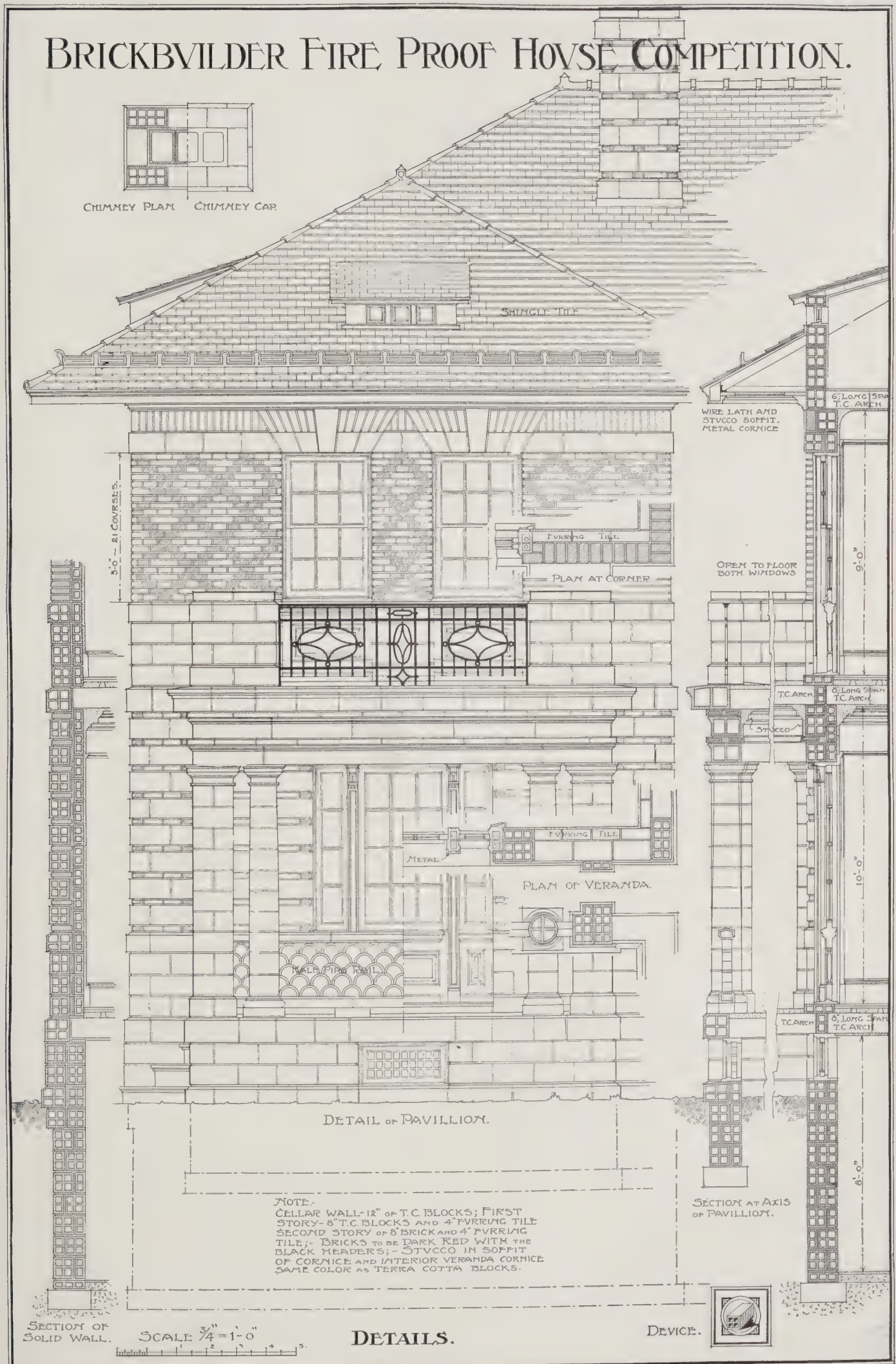
EAST ELEVATION

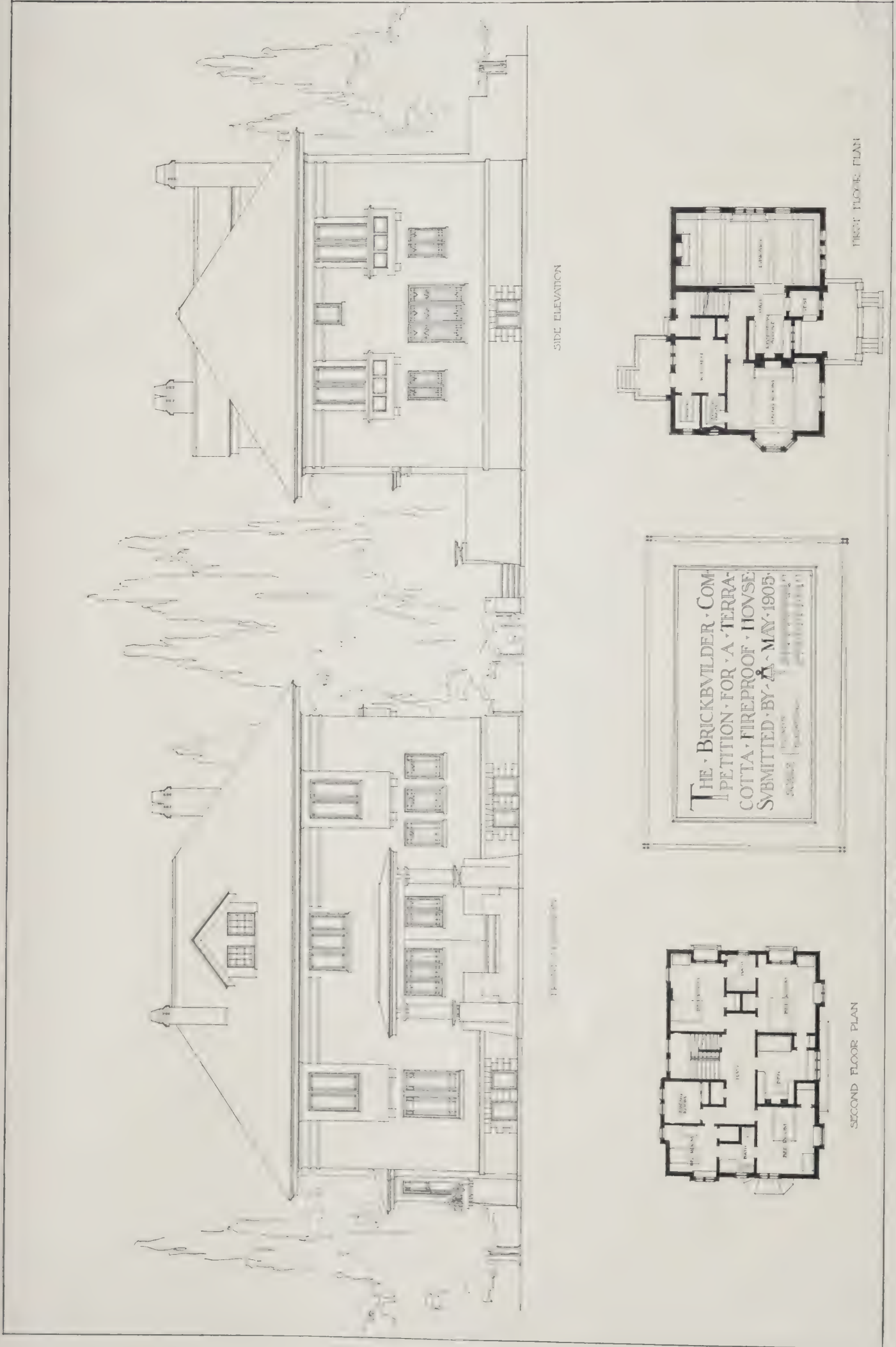
PLANS $\frac{1}{8}'' = 1'-0''$
 ELEVATIONS $\frac{1}{4}'' = 1'-0''$

DEVICE

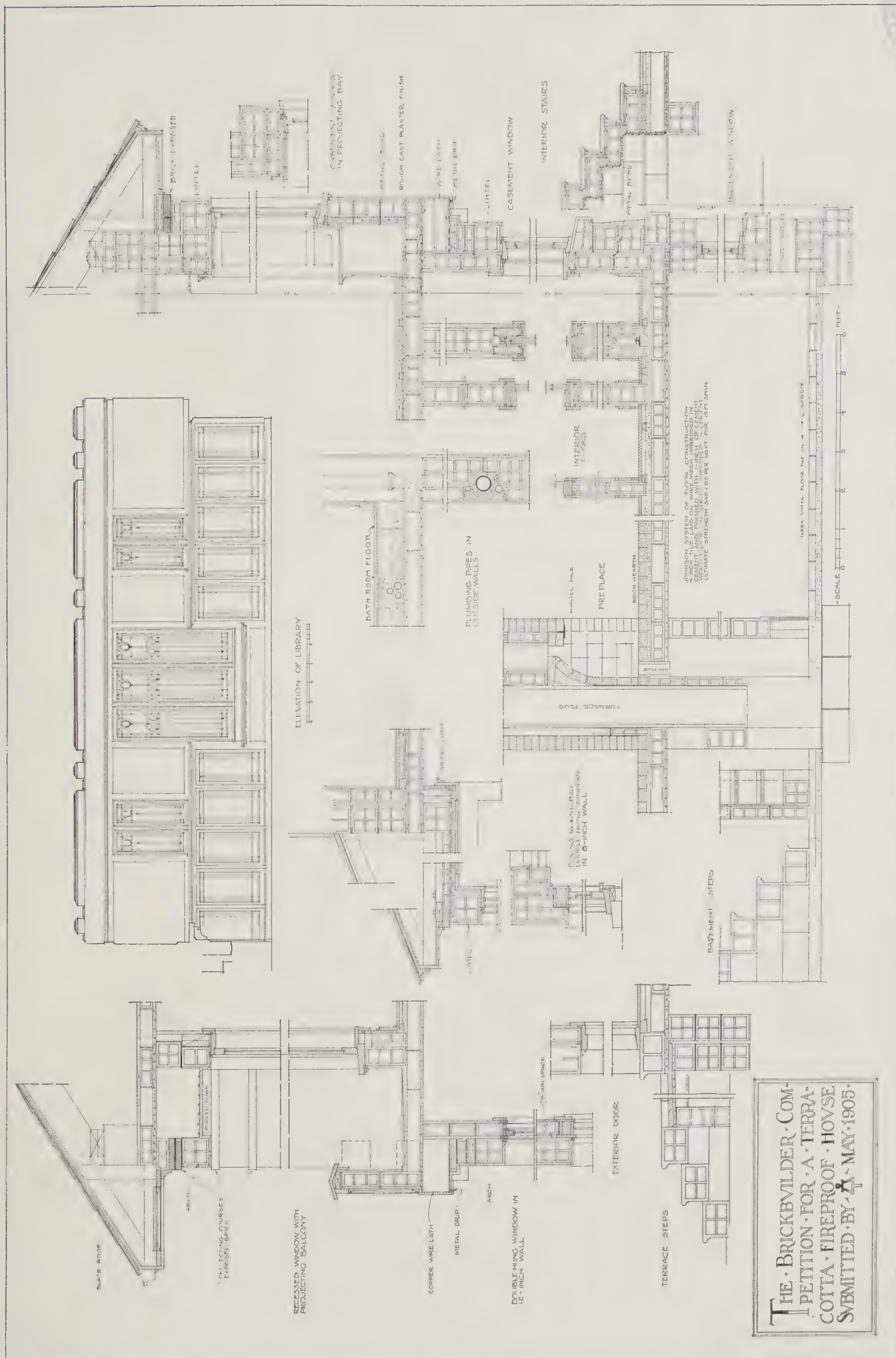


BRICKBUILDER FIRE PROOF HOUSE COMPETITION.






THIRD PRIZE DESIGN. SUBMITTED BY JOSEPH W. WILSON, CHICAGO, ILL.



DETAILS BY JOSEPH W. WILSON.

THE BRICKBUILDER • COM-
PETITION • FOR • A TERRA-
COTTA • FIREPROOF • HOUSE
SUBMITTED BY •  • MAY 1905.

Tile Work and Faience in England. I.

BY R. RANDAL PHILLIPS.

THE finish of walls is a most important consideration in studying the internal appearance of a building, if for no other reason than that the wall is the most con-



TILE WORK IN REFRESHMENT ROOM, SOUTH KENSINGTON MUSEUM.

spicuous portion of an interior. Papers of various sorts, burlap and other fabric, none more durable than another, have been ingeniously tried. As a class these are unsanitary; they offer little resistance to knocks and abrasion, the fading power of strong light, the settlement of the building and other deterioration by which silent Time besieges the best of structures. In public buildings especially must these objections be overcome. Marble has been seized upon as an easy way out of the difficulty. But it is a very expensive way; and so far has the use of large sheets of marble been indulged in that there is already a reaction of taste against it. This reaction can be encouraged and is being encouraged by the inventiveness of manufacturers of tile,

for in this material alone is there unlimited range for variety, in color effects, differences of texture, of shape; and therewith the joint lines of the tiles themselves go to make a varying but simple form of surface decoration. Indeed we may say, in the face even of progress already made, that the modern craftsman's imagination has just begun to play within the great field of encaustic tile and faience. Both of these have clay as their base. Encaustic tile is made by bringing a pressure of ten to twelve tons upon a mixture of dry clay ground as fine as flour. It is then baked and usually glazed, as otherwise its porous body would absorb dirt or display stains. Vitreous tile is made of feldspar or flint mixed with fire clay and then treated to a temperature of 2,000 or 2,500 degrees Fahrenheit, thus making an absolutely non-porous material. Faience is a term which used to signify the best glazed work of mediæval times, so called from Faenza, the Italian city, which was the home of the craft. The body of this material as it is now known in the commercial world is a fine grade of terra cotta. The "glaze," which is really an enamel, because it is not transparent, is made to form one body with the base in the baking accomplished by a temperature of about 2,500 degrees.



TILED COLUMN IN CERAMIC GALLERY, SOUTH KENSINGTON MUSEUM.



TILED SHOP COUNTER.

Within the last twenty years the use of tiles for wall surfaces and floors has developed enormously in England, by reason of the merits of cleanliness and brightness which tiles possess. In city buildings, especially, requirements of sanitation and light have enforced the employment of glazed materials for numerous purposes; the growth, too, of underground rooms, for restaurants, offices, etc., has created a large demand for tiles of all sorts; while in hotels, municipal buildings, baths and hospitals they are very generally employed as wall coverings.

It is not the intention of the writer to go deeply into the history of this development, but he would draw at-



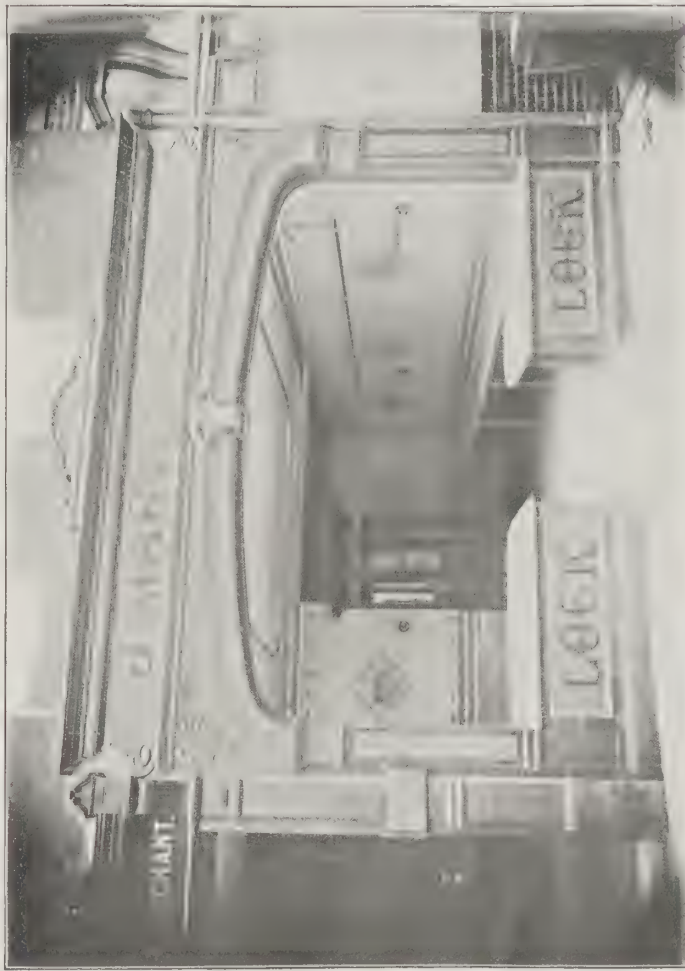
TILE WORK IN CLERKS' ROOM, PRUDENTIAL ASSURANCE CO. BUILDING.
Alfred Waterhouse & Son, Architects.



SEYMOUR WARD, ST. THOMAS'S HOSPITAL, SHOWING PICTURES IN TILES.



A POULTRY, GAME AND FISH SHOP IN GLAZED TILES.



A BUTCHER'S SHOP FINISHED IN TILES.



STAIRCASE, FINISHED IN TILES, PRUDENTIAL ASSURANCE CO. BUILDING.

Alfred Waterhouse & Son, Architects

tention to a few facts. First, it should be noted that, although in the thirteenth, fourteenth and fifteenth centuries in England encaustic tiles were used to a considerable extent for ecclesiastical buildings,—as may still be seen in numerous cathedrals and abbeys,—for the succeeding two hundred years the manufacture practically ceased, and it was not till the seventeenth century that it was revived by the advent of some Dutch potters who established themselves in Lambeth, now the home of the great pottery firm of Doulton & Co., Ltd. From Lambeth it spread to Bristol and Liverpool, the latter being the center of tile manufacture during the latter half of the eighteenth century, to which period belong the first works of Wedgwood. Other famous potters arose at the beginning of the nineteenth century, such as Minton and Barr, and the industry thus revived became rapidly extended. Of Minton's early work there are some excellent examples at South Kensington Museum, where the refreshment room is carried out entirely in tiles, as the accompanying illustration shows; also in the Ceramic Gallery of the Museum there are ten columns encased with glazed embossed tiles of Minton's manufacture (1868), and the staircase leading to this gallery is similarly embellished.

The mid-Victorian exhibitions gave a great impetus to the industry, and the revival of majolica glazed wares was a further stimulus, Mr. Maw, in

1862, being said to have been the first to attempt the manufacture of majolica tiles for architectural purposes. From that time onwards the use of tiles became general, and when, twenty-five years ago, the sanitary reform of buildings was inaugurated, a new era set in and the advantages of glazed surfaces were specially recognized.

It needs no lengthy discourse to indicate what these advantages are for the lining of such places as restaurants and hotels, where cleanliness is so desirable, and it only requires a glance at the illustrations in this article to see what treatments are possible. In modern hospitals tiles are commonly used for dadoes in wards, with a narrow band or bands of a darker color at top and bottom, and the walls above enamel-painted; while in some of the rooms of such institutions the walls are covered with tiles from floor to ceiling, as in operating theaters and children's wards; an excellent example of the latter is to be seen at the new Belgrave Hospital for Children, in the south of London, and at the new general hospital at Tunbridge Wells (illustrated in *THE BRICKBUILDER* for August, 1904); and another example, here shown, is to be found at St. Thomas's Hospital, London, executed by Messrs. Doulton. The use of picture tiles for such purposes brings in a most delightful decorative element which is greatly appreciated by the little patients in these wards and the nurses who have charge of them there. Walls



BANKING ROOM, FINISHED IN TILES, PRUDENTIAL ASSURANCE CO. BUILDING.

Alfred Waterhouse & Son, Architects.

covered with tiles can, of course, be washed down and thus kept perfectly clean, and this undoubtedly is one of their chief merits.

In hotels and restaurants, where, for structural reasons, columns are so frequently unavoidable in the rooms, the easy means of encasing and embellishing them with decorative tiles is commonly adopted, as also for the soffits of arches. In banks, too, a similar treatment is employed in many cases, as at the huge new offices of the Prudential Assurance Company, on High Holborn, London, where glazed tile work and faience have been used throughout by the architects, Messrs. Alfred Waterhouse & Son, the work having been executed by the Burmantofts Works of the Leeds Fireclay Company, Ltd. The Birkbeck Bank, close by, affords perhaps the most



TILED COLUMNS AND GLAZED WARE, BIRKBECK BANK.

T. E. Knightley, Architect.

extensive example of the use of tiles and faience to be found in the Kingdom; both inside and outside they are used, all the corridors and halls being completely lined with tiles. The building is a huge example of tile and faience work. Another example of a large building tiled throughout is the National Liberal Club.

For all kinds of shops, tiles are extensively employed, but more especially for dairy premises, fishmongers' and butchers' and other shops where cleanliness is a first requirement. Two examples are here shown (executed by Messrs. Carter & Co., of Poole), as well as an interesting detail of tiles used for the facing of a counter.

These few remarks will suffice to draw attention to the variety of purposes to which tiles are applicable in public, municipal and business premises, as shown by



TILE WORK ON SOFFITS IN ARCHES, ROYAL COLLEGE OF SCIENCE, SOUTH KENSINGTON MUSEUM.

the accompanying illustrations. In a second article a series of other examples will be given, including some in private houses, together with the relative cost of tiles, their manufacture, durability and method of laying.



ROYAL ARCADE, NORWICH, IN CARRARA WARE.

G. J. Skipper, Architect.

Boston Brickwork. VI.

COMMERCIAL AND MISCELLANEOUS.

THE remarks which have been made in the preceding articles, on the general character of Boston domestic architecture, apply without great variation to the structures which have been designed for commercial purposes. The only important exception would be that while the representative Bostonian has eschewed ostentation in his private surroundings, he has not been averse to a more lavish display in his places of business, no doubt considering, and most properly too, that such display represents in a measure the commercial success of his concern. As all rules have their exceptions, however, it must be noted that the office structures which have been



88. MERCANTILE BUILDING, BOSTON.
Rantoul & Lee, Architects.

fathered by Boston's largest firm of promoters are of a simplicity so intense as to give the surprised beholder an impression of actual weirdness.

Following developments of the city's business buildings through the low gable-roofed structures of the forties and fifties, the red brick and slated Mansards of the sixties, which were so quickly swept away in the great fire of 1872, the iron fronts of the seventies, and the new life and swift growth of the last two decades of the century, one notices first the absence of actual sky-scrapers among the new skeleton buildings. Wise regulations have taken the narrow and winding streets into account and limited the height of any building to one hundred and twenty-five feet, while perhaps less wise ones have further limited heights in certain districts to eighty feet only.

Consequently monstrosities are lacking, and there is a general reasonable feeling of some sort of scale in the relations of the buildings and thoroughfares. Our illustrations show a fairly typical selection among the buildings which make pretence to actual design, although the



89. MILLER PIANO CO. BUILDING.
Wm. G. Rantoul, Architect.

class whose elevations betray a primary consideration for the nimble dollar at the expense of the city's beauty are omitted from consideration.

The State Mutual Building, by Andrews, Jaques & Rantoul, is one of the best designed of the modern office structures of Boston. The sandstone and gray brick façades are tasteful and businesslike, and while the detail of the first story (No. 90 is) graceful, it is still sufficiently sturdy to avoid the cyclopean effect which is sometimes supposed to be desirable.

The Penn Mutual Building (No. 94), by E. V. Seeler, has a charmingly designed entrance. The detail above the entrance story is slightly bizarre, but of the sort that one can probably become accustomed to and finally accept.

After an inspection of the small building in Bedford Street, in early Spanish Renaissance (No. 95), built by Winslow & Bigelow, in yellow terra cotta, one feels that Prentiss's Spanish trip was not in vain, for its façades,



90. STATE MUTUAL INSURANCE CO.'S BUILDING.
Andrews, Jaques, & Rantoul, Architects.



91. MAIN ENTRANCE, TENNIS AND RACQUET CLUB.
Parker & Thomas, Architects.



92. DOORWAY, TENNIS AND RACQUET CLUB.
Parker & Thomas, Architects.



93. DETAIL, MILLER PIANO CO. BUILDING.
Wm. G. Rantoul, Architect.



94. ENTRANCE, PENN MUTUAL BUILDING.
E. V. Seeler, Architect.



95. BUILDING ON BEDFORD STREET.
Winslow & Wetherell, Architects.



97. THE LOYAL LEGION BUILDING.
Rotch & Tilden, Architects.



99. WAREHOUSES, SUMMER STREET.
Winslow & Bigelow, Architects.



98. DELTA BUILDING.
Dwight & Chandler, Architects.



99. LAUNDRY BUILDING, CAMBRIDGE, MASS.
Herbert C. McClare, Architect.

together with those of the Jewelers' Building, by the same firm, certainly show a high appreciation of his labors. It cannot be the fault of the designer if any detail contained in his book fails of representation in these two structures.

The Delta Building (No. 98), by Dwight & Chandler, has a safe façade of no great originality, and in this it is in striking contrast to the next illustration, which shows the Miller Building, by W. G. Rantoul. The

writer has concluded that this is intended for "Art Nouveau" as it should be interpreted in the States. The long first-story arches and their supports are curiously unstructural and weak, but the side entrance has interesting detail, which appears to have been really studied and not copied from the most convenient book of plates. (Nos. 89 and 93.)

The warehouse (No. 88), by Rantoul & Lee, shows a pleasing and well studied façade, free from strangeness



100. ARMORY, CAMBRIDGE, MASS.
Hartwell, Richardson & Driver, Architects.

and likely to live long in the estimation of beholders. One more commercial illustration is appended, being a view of the very substantial and impressive warehouses on Summer Street built by Winslow & Bigelow. (No. 96.) The façades are of light buff brick and the trimmings of black iron.

The Tennis and Racquet Club, by Parker & Thomas, has been previously illustrated in THE BRICKBUILDER and needs no encomiums here. The details of the entrances (Nos. 91 and 92) are worth inspection. The material is red water-struck brick with black headers in panels and patterns and trimmings of white semi-glazed terra cotta. The house of the Loyal Legion (No. 97), by Rotch & Tilden, in very yellow brick and yellow terra cotta, shows a type of Italian architecture which is now but little affected. Nos. 100 and 101 are examples of armories in the military style considered indispensable for such structures. The South Armory (No. 100) is really quite interesting with a well modeled entrance arch and a high tower of pleasing proportions.



101. SOUTH ARMORY.
Waite & Cutter, Architects.

The series of examples of "Boston Brickwork" closes with this article. A good many buildings of importance have been omitted, some because they have been previously illustrated, some because they are to be illustrated later in the plate forms of THE BRICKBUILDER, some because the type to which they belong is represented by other examples, and some because of lack of general interest.

Boston is essentially a brick city and has been so from its beginning. Knowing the material, with its capabilities and its limitations as well as they do, Boston architects have neither attempted the impossible nor the difficult, but taking brick as it is, they have used it in its proper manner, and keeping it in its natural sphere have produced a type of architecture which, without being striking or sensational, will remain satisfactory and pleasing when labored pyrotechnical façades are exciting only ridicule.

(Concluded.)

Brooklyn Masonic Temple.

LORD & HEWLETT, ARCHITECTS.

DESCRIPTION OF THE PLANS.

ATTENTION is called to the following general points in

Economy of Planning. — The intention has been, first, to reduce the cube to the lowest limit consistent with good proportion of the principal rooms and amplitude of circulation throughout the building; second, to leave as much as possible of the plot available for disposal by sale or for other purposes.

Proper Orientation of Lodge Rooms. — The lodge room floors have been planned to secure an economical disposition with proper orientation and still have ample room for stairs, reception room and other accessories, keeping the building open on all sides.

Architectural Treatment. — The effort has been to obtain a dignified architectural treatment in keeping with the character and importance of the building.

First. By use of an order in classic proportion.

Second. By building on a square plan, enabling an almost exact duplication of the two elevations, each one enhancing the value and adding to the effect of the other, and harmonizing in scale and proportion in a way much more difficult to obtain on a plan just slightly off the square.

To differentiate between the two elevations sufficiently to distinguish the purposes of the building, accentuating by the great single central entrance on Claremont Avenue the importance of the Masonic part of the building (for which the building is of course primarily designed), and accusing by the smaller double entrances on Lafayette Avenue the less important auditorium or public part of the building.

Materials and Construction. — It is proposed to use steel frame, fireproof construction, finished inside and out in the manner of a first-class office building, the exterior materials being light brick and terra cotta with a six-foot granite base and granite coping wall. If the funds of the Masonic guild permit the use of a more expensive material, an all marble building would be very appropriate.

Heating, Ventilating and Lighting. — It is proposed to use plenum hot blast system with automatic regulation throughout, centrally located; vertical shaft connected with each floor with ducts formed by furring down ceiling of service corridor.

Lighting to be by electricity, incandescent lamps in control from central point in house mechanism space.

General Data.

Total basement area.....	8,100 sq. ft.
" first floor area.....	8,100 sq. ft.
" " " mezzanine.....	1,220 "
	9,320 "
" second floor area.....	8,100 "
" " " mezzanine.....	2,800 "
	10,900 "
Total cubical contents, 1,118,000 cu. ft.	

Attention is called to the following particular points:

Cellar. — Arranged so that storage vaults are located in that part of the building which forms by its foundation

walls a natural vault and is still accessible by stairs and elevators to upper floors.

Boiler and machinery are located under alley at north side of building, getting light and air from overhead and avoiding the necessity of excavating entire sub-basement.

Basement. — The banquet hall is one great well proportional room, capable of division into three parts, with light and air on two (opposite) sides, affording the best natural ventilation.

The vestibule off elevators and stairs is ample to allow for three separate entrances to banquet hall, for the ready exit and entrance of a crowd, and for billiard room space and passage through the bowling alley under sidewalk, if such is desired.

In regard to the "service": sufficient toilet and coat room space is provided directly off main vestibule, and a band of service is carried across rear of banquet hall, having light and ventilation from alley above and outside entrance to alley at north of building. This serves directly to one or three banquet rooms as desired, and connects by two flights of stairs directly to auditorium.

First Floor. — This floor has been planned to separate the entrance to the strictly Masonic part of the building from the auditorium or public part, featuring the Masonic entrance both in plan and elevation, by its great doorway, vestibule and staircase hall.

The double entrance to the auditorium facilitates the handling of a crowd, while placing the main auditorium entrance on axis with the Masonic entrance vestibule, staircase, etc., makes it possible to open both into one great hallway at such times as the entire building is being used by the Masonic fraternity.

The auditorium is shaped to give the maximum floor area with sufficient space for service, chair storage, etc., and is provided with ample exits to open on three sides.

The square form of the building makes it possible to reverse the plan as shown and secure the Masonic entrance on Lafayette Avenue, if that were considered more important than the proper orientation of the lodge rooms.

Lodge Room Floor. — This floor has been planned to obtain within the smallest possible floor area the requirements as to arrangement, size, etc., of the two lodge rooms together with their accessories and a central service, and an ample vestibule and stair system.

The height of the lodge rooms makes a well proportioned room and allows for a mezzanine floor above vestibule, reception rooms, tyler's and preparation rooms, and over service corridor.

TO those who have suffered from a smoky fireplace we would recommend the perusal of Benjamin Franklin's remarkable treatise on "How to Cure Smoky Chimneys." We do not always appreciate the scope of the genius of our first American statesman. He established the first post office; he first drew lightning from the skies; he wrote papers and scientific treatises which are classics to-day; and he, more than any other man of his time, molded the destinies of our Republic. He played with the mightiest questions of state, but was not too preoccupied to consider how to make a bad fireplace better, and we have not yet been able to devise any particular improvement on his methods.

Editorial Comment and Selected Miscellany

ARCHITECTURAL FAIENCE COMPETITION A. GARDEN WALL FOUNTAIN.

MR. C. HOWARD WALKER, who judged the Competition held by THE BRICKBUILDER for a Garden Wall Fountain, to be executed in colored faience, has awarded the First Prize (\$50.00) to the design submitted by Gordon B. Pike and William L. Welton of New York City. Several of the designs submitted in the Competition, including the prize design, will be published in THE BRICKBUILDER for August.

MODERN CHANGES.

IN 1888 the first steel skeleton building was erected in New York City, a structure known as the Tower Building, designed by Bradford L. Gilbert. This is now about to be torn down to make way for a large office building of twenty stories, and the fact that though in perfectly good structural condition to-day and only seventeen years old it should be so torn down to make way for improvements is a striking illustration at once of the changes which have been made possible by steel construction as applied to building, and also of the



Elevation on Lafayette Avenue.

SUCCESSFUL COMPETITIVE DESIGN FOR MASONIC TEMPLE,
BROOKLYN, N. Y.
Lord & Hewlett, Architects.

changes that have come about in the economic conditions resulting from the possibilities involved in piling up the commercial structure to twenty or more stories. The steel skeleton has revolutionized our bases for estimating the values of real estate. Chicago claims the very earliest example of a complete steel skeleton building in the



BRANCH TELEPHONE BUILDING, MILWAUKEE, WIS.
Herman J. Esser, Architect.

Home Life Building, which was erected by Mr. Jenney; but any architect who, after arriving at years of maturity, made his first attempt in steel construction without other tangible examples immediately around him, can well appreciate the structural courage required to adopt such a building device. All the predictions which were so freely made by the conservatives in regard to steel construction have been proven to be unfounded. So far as



MANTEL IN COLORED MATT GLAZE FAIENCE.
Made by the Rookwood Pottery Co.

we know there has not been a case of a wall which has ever shown the slightest effect of unequal expansion between the masonry and the steel, the chief bugbear of the earlier structures; and the wind strains which have been at times represented as being so dangerous, and against which such excessive precautions were taken, have, as far as we can ascertain, never yet put in an appearance. In the early days we were oracularly told that the elevator-carrying capacity was the limiting factor in the height. If such limits exist we have not yet reached them, and there is not the slightest structural or mechanical reason why we should not build to one hundred stories or more if we wish. The economic effects of this enormous increase in possibilities of land im-



BRANCH TELEPHONE BUILDING, MILWAUKEE, WIS.
Herman J. Esser, Architect.



BRANCH TELEPHONE BUILDING, MILWAUKEE, WIS.
Herman J. Esser, Architect.



THE NEW HIPPODROME BUILDING, NEW YORK CITY.
Architectural Terra Cotta furnished by the Atlantic Terra Cotta Co.

provement have completely transformed New York and are in process of transforming the business centers of all our large cities, though nowhere have the restrictions been so slight in regard to height and area as in the metropolis. Less than twenty years has witnessed all this tremendous development, and the end is not yet. It is perfectly safe to predict that the next quarter century is likely to witness even greater changes in many details of our commercial architecture.

CEMENT MORTAR.

A GOOD deal of misapprehension prevails, especially among the older builders, regarding the exact meaning of the designation "cement mortar." In the days before Portland cement was plentiful, cheap and of fine quality, when Rosendale was the most approved American brand, and cement could be used at the best but sparingly, mortar in the abstract always meant a mixture of lime and sand. When for constructive purposes a somewhat greater strength was desired, a pro-



UNIQUE TREATMENT OF A
CORNER LOT.

portion of cement was added rarely exceeding the bulk of the lime, making a mortar which was popularly designated as half and half, or as cement mortar. Of recent years, however, the meaning of this phraseology has been changed. Those who have given careful study to cement have restricted the designation of cement mortar to a mixture of sand and cement only, so that, as accepted by the best engineers to-day, the term can not strictly be applied to any mixture which contains even a slight proportion of lime. Many of the older builders continue to consider cement mortar as a mixture of the three materials, but it is hardly any longer properly so considered.

As cement mortar began to crowd out lime, mechanics discovered that cement and sand could not be used for mortar in exactly the same way and with exactly the same facility to which they had been accustomed in the mixture of cement and lime. Many masons still aver that it is impossible properly to lay up bricks in pure cement mortar. It is, however, very far from being really impossible, and as a matter



INTERIOR OF RAILWAY STATION, MINNEAPOLIS.
Charles S. Frost, Architect.

Showing Tiffany Enameled Brick in combination with regular face brick.

of fact the cost of laying up bricks with pure cement, by men who are used to handling the mixture, is but very little more than if the bricks are laid up with mortar composed partly of lime. At the same time there are certain advantages for ordinary mason work in using a slight admixture of lime. The resulting mortar is more plastic and will retain its water more completely, so that the brick work is less liable to be stained by the cement running down the outside of the wall than would be the case if pure cement were used. The danger, however, is in allowing mechanics discretion in such use of lime. One part in bulk of lime to four parts of cement is the utmost that is necessary to obtain a tenacious, self-contained mortar, and any



DETAIL BY RANKIN, KELLOGG & CRANE,
ARCHITECTS.
New York Architectural Terra Cotta Co.,
Makers.



EMPIRE BANK BUILDING, CLARKSBURG, W. VA.
Fireproofed by the National Fireproofing Co.

lime added beyond that amount is simply adulteration. Some cement makers have gone so far as to put on the market a barreled product containing a known proportion of slacked lime and of cement. We should, however, prefer to trust to the mixture

made under the eye of the architect rather than to the mixture bought more or less at hazard in this way, and certainly the only essential reason for adding lime at all in mortar for brickwork subjected to severe strains would be to prevent discoloration on the exterior.

SAND LIME BRICK.

THE Sand Lime Brick Company secures a fresh crop of victims each year. If we are incorrect in using the word "victim" we should be glad to be set right. So far



DETAIL BY NEW JERSEY TERRA COTTA CO.

the best samples of lime bricks which have come to our notice were made in Germany, and we do not know of any factory in this country which has been able to manufacture and market sand lime bricks of first-class quality as to endurance, hardness and absorption; and yet every little while we see a notice of a new company being formed to exploit this fascinating material, and in a recent issue of one of the English papers a Canadian cousin writes very enthusiastically about the new plant in which he is interested, which is to revolutionize the brick industry and throw burnt clay into oblivion. If any of our readers have had any experience with American-made sand bricks we should be glad to hear from them. There are perennial substitutes offered for burnt clay; infusorial earth, asbestos sand,

magnesia, cement compounds and mixtures of wood pulp as a base have all put in appearance, without, however, in the slightest degree affecting the sales of burnt clay. It would be idle to say that nothing better



DETAIL BY VONNEGUT & BOHN, ARCHITECTS.
Indianapolis Terra Cotta Co., Makers.



DETAIL BY HAMME
& LEHER, ARCHI-
TECTS.

Conklin-Armstrong
Terra Cotta Co.,
Makers.

could be imagined, but the better has not yet made its commercial appearance.

NEW BOOKS.

BUILDING MATERIALS. Their Nature, Properties and Manufacture. By G. A. T. Middleton, A. R. I. B. A. Large crown 8vo, linen. Price \$4.00. New York: W. T. Comstock.

The book takes up the subject in detail, starting in the first chapter with the origin of sand, slate, marble, stone, etc. The subsequent chapters give these various materials and their adaptability to different purposes.

The author has spent a large amount of time in collecting material and valuable data on the subject. The result of this has been to place before the reader much practical information. A very full and exhaustive index has been prepared for ready reference. The book contains four

IN GENERAL.

hundred and twenty pages, with over two hundred illustrations from special drawings and photographs.

Clinton & Russell were the architects of the Beaver Building, New York City, illustrated in *THE BRICKBUILDER* for June, and not Cass Gilbert, as stated.



HOFFMAN APARTMENTS, GRAND RAPIDS, MICH.
F. P. Allen & Son, Architects.
Brick furnished by Columbus Brick and Terra Cotta Co.
F. H. McDonald, Agent.



HALE & KILBURN BUILDING, PHILADELPHIA.
Architectural Terra Cotta made by Excelsior Terra Cotta Co.

The business of John Parkinson, architect, will hereafter be conducted under the firm name of John Parkinson and Edwin Bergstrom, offices 1215 Braly Building, Los Angeles, Cal.

Ballantyne & Evans, architects, New York City, have dissolved partnership. Mr. Ballantyne will continue the practice of architecture, while Mr. Evans will devote his time to the practice of civil engineering. Offices of both, 22 Pine Street.

The architects, engineers and draughtsmen of Fort Worth and Dallas, Texas, have organized the Southwestern Technical Society for the purpose of advancing the interests of their professions. The following were elected as officers: Charles D. Hill, president; B. Gage Leake,



DETAIL BY W. D. VAN SICLEN,
ARCHITECT.
Winkle Terra Cotta Co., Makers.

vice-president; Frederick E. Henkel, secretary and treasurer.

Carl F. White, architect, Cleveland, Ohio, has taken offices in the American Trust Building of that city. Manufacturers' catalogues and samples desired.

At the final meeting of the Washington Architectural Club for the season the following officers were elected: Louis A. Simon, president; Albert L. Harris, vice-president; Leo J. Weissenborn, secretary; Warren W. Youngs, treasurer.

On June 13 Frederick V. Murphy, winner of the Second Traveling Scholarship given by the club, sailed



DETAIL BY HOLMBOE & LAFFERTY, ARCHITECTS.

Northwestern Terra Cotta Co., Makers.

for Europe. He will spend several years in study at the Ecole des Beaux Arts and in the ateliers of Paris.

Fiske & Company, Inc., have opened a New York office in the Flatiron Building, for the purpose of conducting a general agency for building brick, terra cotta, tiles and other burnt clay products. J. Parker B. Fiske will have the management of this branch of the company's business.

The Grueby Faience Company has been awarded the contract for the faience to be used in the exterior walls of the Carnegie Technical Schools at Pittsburg, Pa., Palmer & Hornbostel, architects.

The new Frick Building, which is to be built in Pittsburg, will have two of its façades laid up in a mottled



DETAIL BY OTTO BLACK, ARCHITECT.

Brick Terra Cotta and Tile Co., Makers.

enameled brick, which will give the building the appearance of having been built of polished granite. The light shafts will also be built of enameled brick. These brick, some six hundred thousand, are being made especially for this building by the American Enameled Brick & Tile Company of New York City. The building, when completed, will command more than the usual attention given to a new building, because of the employment of small units, glazed, for the exterior walls. If the material successfully withstands the assault of smoke and dirt,

for which Pittsburg in particular is noted, it will have achieved a new triumph for glazed clay products.

Americans are sharing in the London building boom. No less than four large modern hotels are

under construction or contemplated, in addition to a great number of office and warehouse buildings. In connection with this boom British architects and builders are adopting to a considerable extent American methods of steel frame and fireproof construction.

The National Fireproofing Company has been successful in securing a number of contracts for fireproof work in these new buildings, and has recently made a test in London of their patented reinforced terra cotta floor-arch construction. This test was made under the direction of the British Fire Prevention Committee. The fire-resisting floor-arch construction which was tested consisted of hollow tiles of burned clay material, with a metal reinforcement in the form of a wire truss. This arch was supported by steel I beams, spaced at proper distances to sustain safely the superimposed load to be carried.

The requirements of the British Fire Prevention Committee are very rigid, consisting of a fire test of four hours at a temperature of 1700 degrees, after which water is applied to the under side of the arch.

A test of the construction described was made on June 28, and was entirely successful. Hollow tile reinforced floors are absolutely fireproof, and at the same time are much lighter and stronger than other systems heretofore used in London.



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No. 8

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FROM WORK OF MARSH & PETER, JAMES PURDON, L. W. ROBINSON
AND C. H. BLACKALL, WOOD, DONN & DEMING.

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CHOIR SCREEN IN CHURCH OF LO SEO, SARAGOSSA, SPAIN.

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ARCHITECTURAL EDUCATION.

THERE is a gap between the work of the architectural schools, which are training young men for the practice of their profession, and the ideals and desires of the architects, to whom later these young men will apply for situations. Many attempts have been made to bridge this separation and to bring the educational lines of the colleges more closely to the practical work of the profession. It is the constant complaint that a young man immediately after completing his architectural course is seldom of any commercial value. It is fully appreciated that the architectural work of the schools is something to a considerable extent quite distinct from the routine of office practice, and if a choice is to be made between the two, the cloister studies are, on the whole, of more importance to the students than the practical topics, which can be mastered in actual business experience. At the same time the desirability of so training the students that they will feel the reality of their profession is as patent to them as it is to their educators.

The architectural department of Harvard University is about to make an interesting experiment which will be closely watched during the ensuing year. A number of the leading Boston architects have agreed to lend their aid to the University, by each in turn, for a specified time, taking charge of the architectural work of the students, selecting the problem, assisting the men with criticisms and advice, and finally judging and grading the work. This experiment, let us hope, may succeed in introducing more of the real practical point of view into the studies of the young men and will, at the same time, give them an opportunity to profit by the criticisms and opinions of actual practitioners.

Columbia College also is aiming at somewhat the same results by applying to its course a modification of the Atelier system, under which the students are allowed to employ part of their time in office work under certain designated architectural firms, the University recognizing such work as a part of the students' regular education.

The Boston Society of Architects is attempting a certain kind of help in this direction, a special committee having been appointed, which makes it its business to examine the work done by the students in different art and architectural courses and to advise, as far as possible, in regard to the same.

The architect who thinks that architectural schooling is limited to the three or four great schools fails to appreciate the extent to which architectural education has been worked into the courses of many institutions. A night school, a manual training school, a normal art institution, or in fact almost any art institute, which does not now include a more or less extended instruction in architecture, is the exception rather than the rule, and there are besides a number of correspondence schools which are doing a good though necessarily very restricted work among a certain class of students. Whether this extension of architectural schooling is a good thing or not is really an open question. Many of the students in the inferior courses enter them with no thought of practising architecture or being draughtsmen, but with the idea that it may possibly help them as artificers or as contractors, while, of course, there are a large and increasing number of men and women who every year make a study of architecture merely as a fine art.

In so specialized a profession as architecture the possession of a little knowledge is often a dangerous thing, and a most uncomfortable sort of a client is the man or, worse yet, the woman who has studied architecture. A talent for any art is rare, but it is given to most people of intelligence to cultivate an appreciation for an art which can add very materially to the pleasure of life, so that even if occasionally the architect in practice may suffer from the surplus of knowledge on the part of his client there is hardly any doubt that the minor architectural schools, even when they impart only a smattering of knowledge, are performing a good work, limited though it may be. The danger is that the young men and women who are proposing to take architecture seriously are too often led to believe that there are short cuts to professional attainments and that the results of the training of a lifetime can be compressed by clever instructors into the space of one or two years.

Ecclesiastical Architecture.

PAPER VI.

A FORECAST OF THE FUTURE.

BY RALPH ADAMS CRAM, F. A. I. A., F. R. G. S.

IN the last paper contributed to this series I was betrayed into error through a trick of memory: in speaking of a certain tendency visible in this country during the last quarter of the nineteenth century, and due very largely, it seemed to me, to the influence of Ruskin, I attributed the new "Old South Church," Boston, to John Sturgis; as a matter of fact, as every one knows perfectly well, this was the work of Cummings & Sears. The blunder was opportune, for it gives a chance to include one or two other names closely identified with the development of religious art in this country. Mr. Cummings himself, who stood so strongly for the manifold beauties of Italian Gothic, and was pressing the claims of delicacy, refinement, intimate love and faithful study of beauty in detail; Ware and Van Brunt, who, loving Gothic, were yet never content with archaeological copying but strove always for originality and spontaneity of expression, unsuccessfully, perhaps, if we judge results by Memorial Hall, Cambridge, and St. Stephens, Lynn, but the motive was deserving of deep respect. But for the utterly dominating force, even tyrannical if you like, of Richardson, this notable group of masterly men — Cummings & Sears, Ware & Van Brunt, Sturgis, and Emerson with his passion for picturesqueness — would have worked out in the last century a sound type of religious architecture that, as it happened, had to wait for this century and until Richardson's revolutionary dogmas had been assimilated and the language in which they were expressed discredited and forgotten.

It was probably well that matters should have followed this course; Richardson stood for certain principles of breadth and largeness and virility that were absolutely necessary; we have them now, and we shall hardly forget them, but at the same time we should remember also Cummings's revelation of the power that lies in exquisite detail, Sturgis's law of strength through diversity, Van Brunt's lesson that Gothic is not Gothic unless it is personal and contemporary, and Emerson's teaching that all work may, and indeed must, be viewed in one way as a picture.

I do not propose to enter here into a discussion of the work done by the new school of Gothicists that rose into view in the last decade of the nineteenth century, nor yet to marshal their names in a catalogue. It would be impossible, and besides we are even now in the midst of things; the work of restoring and revivifying Gothic is proceeding with leaps and bounds, and it is too soon to form correct judgments or venture on forecasts. Death has removed many and the cause is weakened thereby. Halsey Wood we could not spare, he thought Gothic as instinctively as the best thirteenth century master-mason of them all. Sometimes his passionate enthusiasm seemed almost to drive him mad, but he had it in him to a most astounding degree, and when he died, religious architecture staggered under the blow. And no man ever loved Gothic and worked for its victory more strenuously than

Charles Francis Wentworth. I speak here of what I know. John Stewardson and Walter Cope were two men whose importance in the cause of sound art cannot possibly be overestimated, and Henry Randall, word of whose untimely death has only just come to us: we halt blind and dumbfounded before the mystery of death that takes them when scores of others could better have been spared. Love and devotion, enthusiasm and faith lay behind all these men as the mainspring of their activity, and without these things nothing whatever can be done.

Well, we must fight on with those that are left, and they are neither few in number nor inadequate in power. First of all note the Nestor of the profession, a man from the generation preceding the contemporary circle of young fellows, Mr. Post. Perfectly competent always, in classic and Romanesque modes, he suddenly turns towards the Gothic propaganda and sets its devotees blinking with such work as that for the College of the City of New York, equal to and surpassing what they can do at their best. Shepley, Rutan and Coolidge also, though of a younger group, forsake their traditional Richardsonian and turn for the moment to good fifteenth century Gothic, giving out work that is rather too cautiously archaeological perhaps, but sound and true and full of real feeling. And there are firms who in the past have shown their ability to break away from current classical modes and return to our own racial and historical style, though only too often these very successful essays seem to have been sports only, indicating neither conviction nor fixed principle of amendment, — Peabody & Stearns's Unitarian meeting-house in Weston; McKim, Mead & White's exquisite St. Peter's, Morristown. Things like these show how innate is the feeling for vital and ethnic style, a feeling that might have had issue in wonderful works but for the frenzy with which we have hurried, first after Richardson and then after Parisian modes. Again, others of the older men have seemed to fix themselves permanently in Gothic in its more scholastic and archaeological aspect. Allen, Brigham, Hartwell, to name a few Bostonians, and they have their fellows in all other parts of the country. For the most part, however, all those I have just referred to work in Gothic from the books onward, not from the soul outward, not as convinced that Gothic is just a cant name for the one sound style we have inherited without blood, — an inheritance we may refuse, but is ours just the same, however far afield we may wander after the strange gods of Paris or the Auvergne.

But there is another class, that to which Wood and Stewardson and Wentworth belonged, men who do not work always in Gothic, — how could they? — but who sympathize with it heartily, and down underneath the show of things that appears on tracing cloth and egg-shell cartoon, believe it really does contain all the good claimed for and admitted of the popular French fashion, and a good deal more besides. Here are a few names: Vaughan, Sturgis, Lewis, Walker, Schweinfurth, Maginnis in Boston; Barney & Chapman, Tracy & Swartwout and Kirby in New York (few here, for it takes courage to invade the domain of the S. B. A. A.); Day, Mann, Field and Medary, Seeler, Eyre (once upon a time) and several others in Philadelphia; McLaren and Ernest Coxhead in the West; Pond and Pond, Frost & Granger, Sutcliff and C. F. Schweinfurth, with a good group of younger men

in the center, amongst whom, in defiance of possible protest, I insist on including the name of the man whom I really think essentially the most Gothic of all, Louis Sullivan.

I am writing far away from sources of reference and have therefore named only a few men from amongst a group far larger than the limited nomenclature would indicate. Where they come from heaven knows. Not from the schools for the very word "Gothic" is anathema there. They must have "growed," like Topsy, out of the persistent soil of inextinguishable inheritance and under the sun of dawning spirituality. They exist, however, in spite of fate and Paris, and they can't be ridiculed into desuetude, for they work on principle; they can't be starved into abeyance, for organized religion exists and has taken on a new lease of life since the close of the century that fondly boasted its ability to do it to death.

thirteenth, fourteenth, fifteenth century, French, Spanish, English; take the subway to the mediæval annex." No, your zealous Goth believes there is only one style fit for Christians, and that is Gothic; but nine times out of ten if you ask him you will find that what he means by Gothic is something very different to and far less archæological than what you had supposed.

Let me try to put into a few words the creed of the Gothicist. He believes these things: First, that there are certain laws impossible to put into words (but as easily distinguished as a harmony from a discord in music), of proportion, composition, organic relation and development that are fundamental, and that these laws underlie *all* good architecture and are exactly and finally the same whether the work is Greek, Roman, Gothic, Japanese or Ecole des Beaux-Arts; second, that archæology isn't architecture, imitation design, or orders and moldings, whether classic or Gothic, a result of divine revela-



EMMANUEL CHURCH, CLEVELAND, OHIO.

But this is not the justification of Gothic, the mere fact that it happens to be the only adequate language for organized Christianity; of course it is that, and there would always have to be men who could build churches, but your true Goth does not look on architecture as a kind of esthetic department store. "College buildings? You will find a complete line of Greco-Georgian articles; down the alley to the right. Yes, madam, great sale of slightly shopworn Romanesque remnants now going on; downstairs, turn to the left. Post offices? Certainly, an enormous stock with constant accessions, all guaranteed real Renaissance; tailoring department, second floor. No, madam, we do not carry any châteauesque Fifth Avenue palaces now; no call for them. M. Cartouche will fit you splendidly, however, if you desire quite the latest thing just from Paris; up one flight, entire floor. An office building? We have the finest line on earth, patent extension styles fitted while you wait; take the elevator to the thirty-second floor. Churches? Yes, sir, we cater especially to the cloth, all real Gothic and twenty yards high,

tion. He holds that architecture is a language, not a sequence of fads, and that style is nonsense unless it develops from historical and racial associations, expresses construction, function and contemporary ideas, uses honest materials honestly and is intrinsically beautiful, both in detail and as a whole; third, that Greek and Roman and early Renaissance and modern French architecture possess many elements of pure beauty, but that as a matter of fact this beauty is actually inferior in every particular to that which was evolved during the great thousand years of Christian civilization from 600 to 1600 A. D., Gothic, so called, not only possessing in its integrity the whole body of classical tradition of proportion, composition and development, but having evolved as well detail, moldings and carved ornament immeasurably more beautiful in every particular than anything ever produced in earlier times; fourth, that we of the Anglo-Saxon race and the twentieth century have been cut off from the classical succession by ten centuries of splendid racial developments with its own supreme and perfect mode of artistic

expression; that the sixteenth century break was temporary only and episodal; that the style then intruded was one of a kind of cheap paganism, and that now, as we awake again to higher ideals, we are bound in consistency to reject the affected "classic" that was the work of the neo-paganism of the sixteenth century and return to our own racial style that was developed while we were yet consistent Christians.

The modern Goth is the defender of Christian civilization against paganism. He is not in the least ashamed to declare himself a Christian and a Catholic. The moment he began to serve the Church in his profession he realized that it was nonsense to think of any form of classical architecture as a fitting material expression thereof, first, because Christianity had definitely rejected it after a fair trial, had taken a thousand years to develop a substitute, had succeeded in producing a style retaining

ually dawned on the student that the whole question of modern society was involved. On the one hand was the logical outcome of the neo-paganism of the sixteenth century,—materialism, savage individualism, political absolutism transferred from the tyrant to the obligarchy of partisan bosses, financial brigandage, selfish and unprincipled capital in a death grapple with selfish and unprincipled labor, social corruption, domestic immorality, and graft; on the other, religion, recrudescing, fighting steadily against the powers of hell. From being simply the only logical and consistent expression of an organized Christianity that simply refused to be killed, but impossible of employment elsewhere, Gothic suddenly became a synonym for the fight for Christian civilization against the paganism in society, politics, trade, industry and finance, so exquisitely expressed by the Renaissance style it had developed early in the game for this particular purpose.



STUDY FOR A CHURCH IN THE SUBURBS OF BOSTON.

every basic principle of sound design while expressing in every detail the whole body of the Christian faith with an unheard of degree of delicacy, and had held to this style until chaos and ruin and revolution wrecked everything at the time of the Reformation; second, because Renaissance architecture bears the mark of the Beast, being the style developed in the sixteenth century to voice accurately that element in the Renaissance which, triumphant over all that was sane, sound and Christian in the movement, produced Borgia popes, Medici tyrants, the inquisition and Macchiavelli. St. Peter's is Leo X in architectural form, and its style is fitting only for such organizations, if they still exist, which embody all the evils of paganism without its virtues, and cloak beneath a Christian vesture contempt of God, denial of law and a grinning negation of any essential difference between right and wrong.

It all began with the question of rightly expressing the Church through architectural forms; but it went further, for in the study of principles and affinities it grad-

The Goth believes, therefore, that he insults the reformed Church, Catholic or Protestant, if he tries to cloak her glory in the vesture of heathendom. There is one Christian style and only one; it did not die in the sixteenth century, it only retreated to the sanctuary of the Island of Avallon with King Arthur and all the other inextinguishable truths, to lie there in a long day-dream until the Sun of Righteousness should rise again on the world. It is not day yet, but the east is silver, and Gothic has come back and is at work again. In it there is neither rest nor finality; it grows from day to day, and it must change insensibly but steadily, accepting new conditions, adopting new expedients, fitting itself delicately to every changing mood and movement in the world. In time it will have become as different to what is now called Gothic as that of the fifteenth century is to that of the thirteenth, but it must begin where it left off, and it must work at first from precedent. It will always remain Gothic, *i. e.*, absolute beauty, absolute logic, absolute reason, expressed through perfect personal liberty



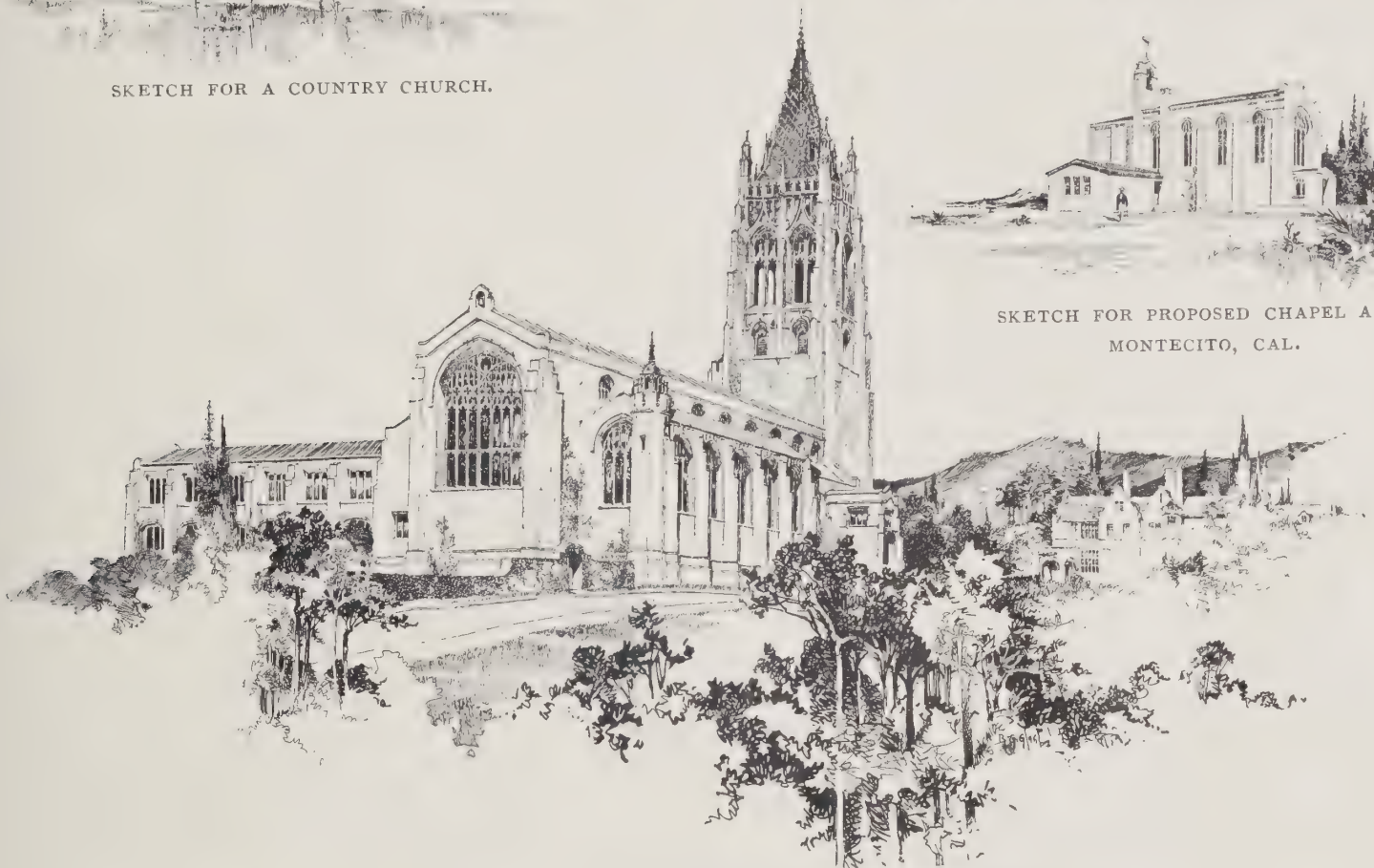
SKETCH FOR A COUNTRY CHURCH.



CHRIST CHURCH, HYDE PARK, MASS.



SKETCH FOR PROPOSED CHAPEL AT
MONTECITO, CAL.



ALL SAINTS' CHURCH, BROOKLINE, MASS.



PROPOSED MEETING HOUSE FOR THE FIRST PARISH
OF CAMBRIDGE, MASS.



STUDY FOR A COUNTRY CHURCH.



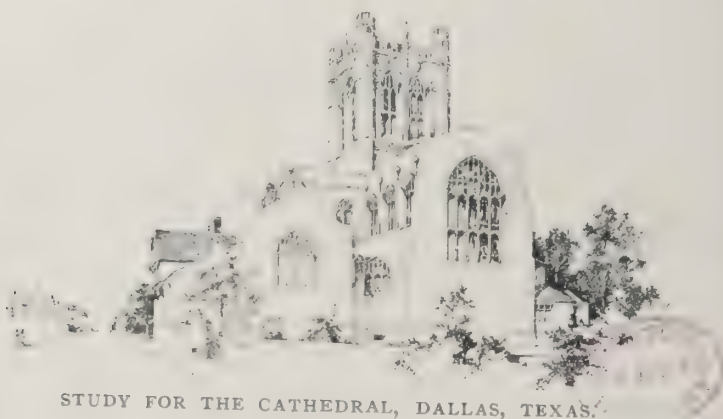
STUDY FOR A COUNTRY CHURCH.

CHURCH OF THE GOOD SHEPHERD,
WASHINGTON, D. C.ST. ANDREW'S CHURCH, VIEW FROM THE
EAST,—DETROIT.

SKETCH FOR UNITARIAN CHURCH, SOMERVILLE, MASS.



MISSION CHAPEL, SHARON, MASS.



STUDY FOR THE CATHEDRAL, DALLAS, TEXAS.



PHILLIP'S CHURCH, EXETER, N. H.



ALL SAINTS' CHURCH, ASHMONT, MASS.



CHAPEL, U. S. MILITARY ACADEMY, WEST POINT.



ST. STEPHEN'S CHURCH, FALL RIVER, MASS.



ST. PAUL'S CHURCH, BROCKTON, MASS.



ST. STEPHEN'S CHURCH, COHASSET, MASS.



ALTAR, CHURCH OF OUR SAVIOUR, MIDDLEBOROUGH, MASS.



ALTAR, ST. MARY'S, WALKERVILLE, ONT.



CHURCH OF OUR SAVIOUR, MIDDLEBOROUGH, MASS.



ST. MARY'S CHURCH, WALKERVILLE, ONT.



MORTUARY CHAPEL, NORWOOD, MASS.

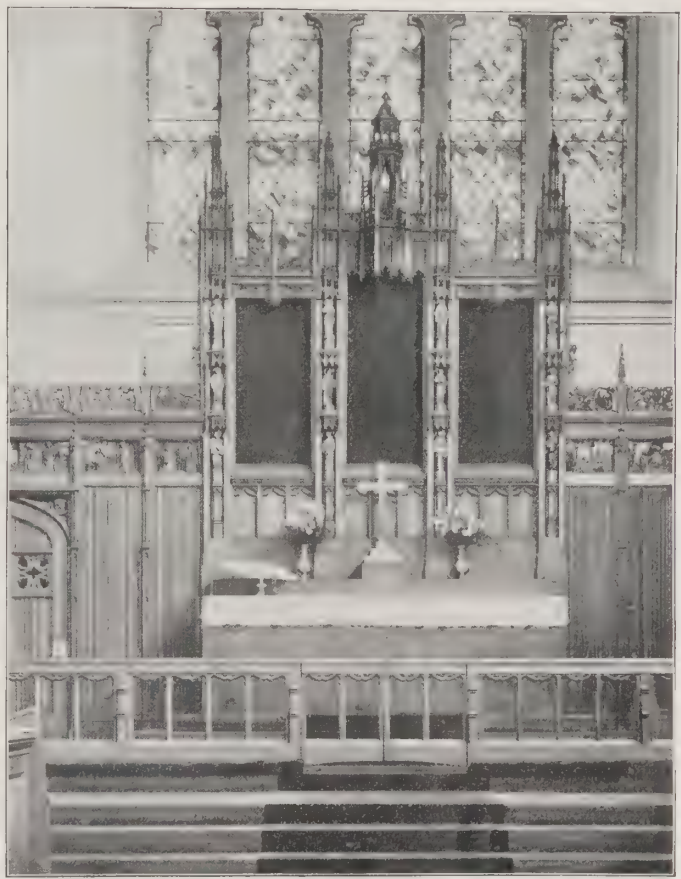


EMMANUEL CHURCH, NEWPORT, R. I.

BOSTON
PUBLIC
LIBRARY



ALTAR, ST. JAMES' CHURCH, PHILADELPHIA.



ALTAR AND REREDOS, ST. PAUL'S, CHICAGO.



BISHOP'S SEDILIUM, ALL SAINTS', ASHMONT, MASS.



ALTAR AND REREDOS, ALL SAINTS', GREAT NECK, L. I.



INTERIOR, ST. MARY'S, WALKERVILLE, ONT.



INTERIOR, ST. STEPHEN'S, COHASSET, MASS.



INTERIOR, CONGREGATIONAL CHURCH, EXETER, N. H.



THE NAVE, ALL SAINTS', ASHMONT, MASS.

under the stern control of inevitable law, rejecting steadily every hint of classical *forms* because of what they connote in Greek, Roman and Renaissance life, namely, heathenism.

Those who accept Gothic on these grounds have a clear field so far as the Church is concerned, for here it is simply sufficient to state the case of the revived pagan style to send it hurrying out of court. They propose to accept the whole body of Gothic as it stood in the year 1500, and then go on to modify and develop it until it expresses every changing shade of the ever-changing, fundamentally immutable Church, precisely as historic Gothic voiced Christian civilization in those ten greatest of all centuries. Then they will try to adapt it to all

early Renaissance and Parisian architecture lies a body of eternal laws that are sound and true (taught better in Paris now than in any other place), that exactly these same laws are the basis of Christian architecture and must be learned first of all; that the forms of pagan architecture possess no exclusive sanctity whatever, and are much less beautiful and highly developed than those of the Christian style, while they are no more fit for Christians to use than are the ritual and paraphernalia of the worship of Diana of Ephesus or Jupiter Olympus. They will first of all postulate eternal laws, then they will teach that architecture with all other forms of art is a language, and the most perfect that exists. They will assert that in spite of appearances this is really a Chris-



ROOD SCREEN AND CHANCEL, ALL SAINTS', GREAT NECK, L. I.

secular powers and activities that have not become exponents of the dominant modern paganism. They believe that evil is never in the saddle for much more than four centuries at a time, and they think its doom is already sealed; that now the tide has turned, more and more of life will escape from the thralldom of the devil, accepting, as the badge of its redemption, Christian architecture, now carelessly nominated "Gothic."

Some day they hope (oh, the iridescence of childlike faith) to get one, just only one, of the schools of architecture to range itself boldly on the side of Christian art and against pagan art, and then they will make of it a great missionary college breeding fanatical prophets of Christian civilization and Christian art. And therein they will teach that beneath Greek and Roman and

tian civilization under which we live, and that therefore it must voice itself through a Christian tongue; they point to Gothic art as the most perfect manifestation of pure beauty the world has ever known, and they will say, "Learn this, all of it, steep yourselves in the solution of absolute beauty, let it soak in until you are full of its medicinal power, and then, sloughing off the pagan hide that has grown over your bodies during four centuries of barbarism, come forth men and Christians and speak with the tongue that is yours by inheritance, the Truth, the whole Truth, and nothing but the Truth, and so help you, God."

NOTE.—The illustrations in this paper are chosen from the work of one firm that has endeavored to carry out the principles indicated above.

Tile Work and Faience in England. II.

BY R. RANDAL PHILLIPS.

IN the present article it is proposed to deal with some of the practical questions affecting tile and faience work, leaving the illustrations to speak for themselves.

It may be added here that in order to adequately represent the tile work which has been done and is being done in England it would require a very sizable volume. One sees in the older buildings, especially those which have an historical interest, a liberal use of tile for decorative and practical purposes, and they have served their various purposes well and come down to us as living

the Middle Ages are recorded in cathedral pavements, priory walks and the gorgeous wainscoting of the Spanish palaces; while nursery rhymes have had expression in the tiles of the German stove, of the kitchen oven, or the later home fireside.

As is generally known to architects and builders, tiles can be made by one of two processes, namely, the "dry" or the "wet." By the former the clay is used so dry that it requires great pressure to mold it, but this results in the shape being easily retained, so as to permit of immediate handling, and there is less trouble in burning. By the other process the clay is made up with water into a more or less plastic condition and is then molded by hand or machine.



TILED CORRIDOR IN SHOREDITCH PUBLIC BATHS.

Henry T. Hare, Architect.

examples of their desirability. They are now meeting the demands of Art and Science to a greater degree, perhaps, than ever before; for they not only lend themselves readily to the requirements of the artist, but also are both durable and sanitary. With a color scheme properly studied, tiles possess a charm for interior work which no other material can give.

Poetry and romance figure on these patterned squares an emblematic history. The lore and deepest traditions of a race have been recorded by means of tiles, for the reason that this medium has ever been ideal for the artist craftsman. By means of long-buried tile, archaeology tells us to-day of civilizations long ago; decorated tiles speak Biblical history to the simple mind; events of

In the process of manufacturing decorative tiles the clay is covered with a film of white china clay, known as "slip," so as to afford a clear opaque backing for the glaze and to prevent the latter being absorbed into the body of the tile and being blemished by any impurities (such as iron) in the clay. The purer the slip the more brilliant will be the effect of the glaze. Considerable difficulty, however, is caused by the latter. By rights theoretically both the face and body of the tile should contract equally on cooling; but they do not; and the addition of the slip complicates matters. Consequently cracks, generally minute but sometimes serious, occur in the glaze. This is known as "crazing," and is of two kinds — those cracks occurring in the thickness of the film but



PAGANI'S RESTAURANT. A FACADE TREATED WITH TILE AND FAIENCE.
Charles Worley and Beresford Pite, Architects.

not actually splitting it, and those that divide the glaze and so expose the tile to the elements. As Mr. Halsey Ricardo observes, in many cases the "crazing" (where the cracks do not come through the glaze) adds a charm and quality to the tile. The walls of the fissures on either side slope at an angle and catch and reflect the light, giving a luster and a sparkle to the tile. But where the "crazing" is through, it is an evil, for it renders the tile unfit for use if exposed to the weather, and even for internal use the beauty of the tile is gradually dimmed, because in time the cracks get filled up with a fine siltage of dirt, giving the effect of a black cobweb sullyng the surface.

Of encaustic tiles there are three varieties: first, in which the pattern is in relief and of the same color as the ground; second, in which the pattern is indented or in cloisonnés, either colored the same as the ground or in various colors; and third, in which the pattern is formed by first filling deep indentations with clay of a different color.

In painting tiles two methods are adopted, namely, the "underglaze" and the "overglaze." In the former the color is painted on the porous surface of the once baked clay, and over this is spread the glaze. By the other process the painting is done on the glazed surface of the tile (twice baked) and fired at a third burning. Of these two processes the "underglaze" is the more direct and surer way of incorporating the painting with the clay, but there are limitations in the coloring on account of the firing.

As regards tests for glazed tiles, it is the common practice in London to spot the surface with red ink and to see whether this spreads underneath or not: if it does, then the glaze is "crazed" through and the tile is defective.

Tiles for decorative purposes are usually made from three-eighths inch to one-half inch thick and in all sizes, though the stock sizes are squares of six, five, four and one-half, four, three, two, one and one-half and one inches. Longitudinal and diagonal half-tiles are almost always made in every kind except hand-painted varieties. The tiles should have good keyed backs. Before fixing all old plaster should be entirely removed. The

tiles should be bedded in neat Portland cement on a backing of Portland cement and sand (one and one) laid on in the same manner as an ordinary rough coat of plaster. The pointing is usually done in Parian cement (though Portland is often used), tinted to the color of the tiles, care being taken to wipe off any cement on the face of the tile. Too much stress has been laid on fine joints in tile work; there is no special disadvantage in a one-half inch joint as against a one-eighth inch or one-fourth inch joint, and wide joints often secure a most pleasing effect, not endeavoring to appear an absolutely plane homogeneous surface, which tiles, by their nature, can never give. For resisting heat in stoves, special tiles are made of a clay of loose physical texture, which allows of expansion caused by sudden heating.

Within recent years a great deal of attention has been given to leadless glazes, and the matter has received the anxious attention of the Home Office. As the results of careful experiment and trial it has been shown that it is quite practicable to obtain every desirable effect without recourse to lead, the use of which is attended by such fatal consequences among the work people.

The cost of decorative tiles is about half that for marble or mosaic, while as regards wearing qualities tiles are equal to either of them.

While there is no necessity to refer at any length to the illustrations accompanying this article, I would mention one



A TEA ROOM FINISHED IN TILES.

or two facts relating to them. The tile work at the Grosvenor Hotel, London, was executed by Mr. Whitehead, and that at Hertford House, London (now the home of the Wallace Collection), by Messrs. Minton, Hollins & Co. With regard to the Savoy Hotel it may be mentioned that here Messrs. Doulton & Co. have employed their "Carrara" ware, which is of a soft cream color, and while possessing all the merits of glazed terracotta is free from that unpleasant tone which this material often presents.

The frieze in the Law Society's new hall in Chancery Lane, London, is a notable example of tile work by Mr. Conrad Dressler, bold in execution and fresh in color, forming a delightful capping to the marble columns and mahogany paneling of the room.



TILE WORK, GRILL ROOM, MIDLAND HOTEL, MANCHESTER.



ELABORATE TILE WORK IN CORRIDOR, HOTEL GROSVENOR, LONDON.
Alfred Waterhouse & Son, Architects.

"Let Your Light So Shine . . ."

THE time-honored maxim of Benjamin Franklin anent the necessity of advertising for "he who by his trade would thrive," applies in some respects to the architectural profession, even though advertising as such is so strongly condemned as non-ethical. The architect to succeed must be known. There is always a right and a wrong way of achieving the kind of notoriety which leads to the most desirable success, and in the fierce competition from which even the architectural profession is not exempt it is very easy to step over the lines, while, on the other hand, in the preoccupation of a busy career one is liable to underestimate the value of being well known, not only to the other members of one's profession, but to the world at large. The comparison is often made that whereas a painter or a sculptor can elaborate in the quiet of his studio a great monumental work of art and offer it



TILED COLUMNS IN THE ATLAS ASSURANCE COMPANY'S OFFICE.

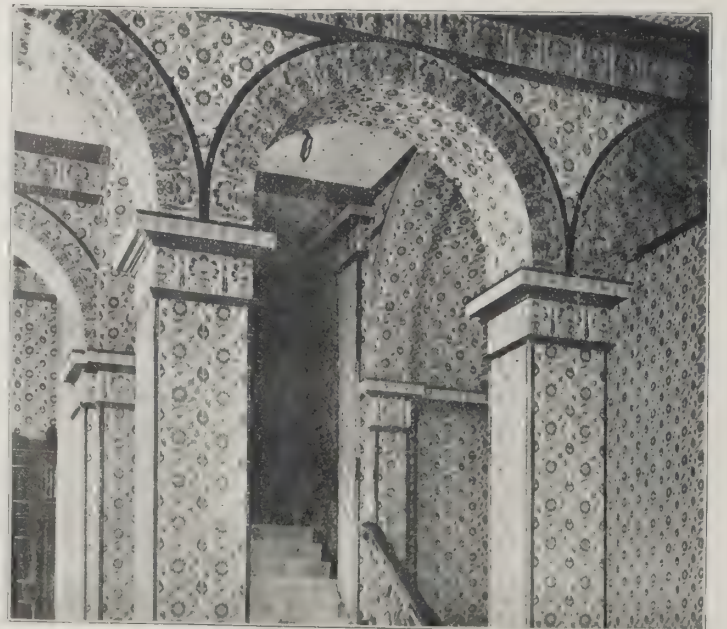
Alfred Waterhouse & Son, Architects.

fully developed to the public, the architect must first find some willing client with whose money he can experiment in order to bring himself to a point where his talent is manifest. This is true as regards the actual building, but as regards illustrations or drawings the architect has a far larger and wider opportunity than either the sculptor or the painter, and the part which the architectural illustrated magazine has played in the architectural development of this country is not to be gainsaid. Opportunity has come to many a young man through a sketch or a clever perspective published in an architectural review. The architectural papers have really led rather than followed, and the gauge of public appreciation has been fixed pretty surely by the kind of work which has been illustrated. The value of the architectural illustrations has not by any means, however, been limited to advertisement purposes. They have offered



FAIENCE FRIEZE BY CONRAD DRESSLER IN LAW SOCIETY'S HALL, CHANCERY LANE.

a medium of comparison, of mutual critical analysis, of cold-blooded merciless criticism, which has been of enormous educational value to the architectural profession. We grow by measuring our strength, our abilities and our opportunities with those about us, and it is hard to conceive of any great architectural development of widespread character which could have come to this country and this age, as it has, without the help of the architectural magazine. These periodicals never have been great money makers. Only rarely have they much more than paid their expenses. They have always represented a labor of love and enthusiasm on the part of those who have given their lives to them. Like all educational forces, the returns from them are ethical rather than practical, and æsthetic rather than sordid. The architectural profession, therefore, in supporting the architectural magazines, in giving of their best freely, in illustrating their most successful work, in contributing their best thoughts, are building for themselves, are cultivating their own powers, and the extent to which an architect is willing and able to illustrate his work is, after all, a pretty fair measure of his artistic and business success.



TILE WORK IN HERTFORD HOUSE, LONDON.

Architectural Faience Competition A.

A GARDEN WALL FOUNTAIN.

CRITICISM AND AWARD.

THE designs submitted in THE BRICKBUILDER'S competition for a Wall Fountain in Faience fall naturally into two classes, in one of which the fountain is subordinate to the wall and placed upon it, the coping of the wall forming the top line. In the other the fountain becomes of a more monumental character and is carried above the wall and has axial and other terminations silhouetted against the sky. In the designs submitted most of these terminations, whether pediments, urns or finials, are feeble and small compared to the masses below. Again, in most cases the fountain shows little sense of incorporation with the wall itself. It may be urged in response to this criticism that the wall is already existent and the fountain placed upon its surface at a later date, but even in that case some intention of bonding or of echo of forms could be apparent. In several cases there is little study given to the basin curbs and seats as factors in the design.

There are several designs which are pictorial merely as far as background is concerned, and these are in every case inferior, inasmuch as they are entirely too small in scale for the surroundings, if for no other reason. As far as color schemes are concerned, it is manifest that broad surfaces should be in neutralized colors, and that if intense colors are used they should be subdivided into small units and neutralized by combination with whites or grays. The existence of the broad neutral mass of the wall forces this choice of coloring.

There is one design which would depend for its value entirely upon the merit of the sculpture and is, in fact, merely a piece of appropriate sculpture set against the wall. If this were an antique fragment, it could be naïvely used in this manner, but if designed and made for the place, it needs a more adequate association with the wall; moreover, it is not an architect's solution of the problem, and as a piece of sculpture, while indicating idea, it is far from being masterly. This preliminary explanation should be considered as influencing the decision and accompanying the criticisms of individual work.

The prize is given to the design submitted by Gordon B. Pike and William L. Welton. The design as a whole is merely a rich background and frame and foreground for any piece of good sculpture, single figure or group in full relief, and as such is excellent, adequate and of individual interest. The fountain is well related to surroundings,—factors, in excellent relative scale; basins, curves and pedestals sufficiently raised above grade to count as features of the design. The rendering is a conventional one, which is to an extent affected, and need not be so brutal, especially in the foliage.

The next in value is a design submitted by George G.

Will. Monumental architectural treatment with broken pediment and urn silhouetted against sky. Urn would seem small, thin and high. As there is very little shadow, projections being slight, the structural support of the heavy masses of light tone in the epistyle and pediment need supporting members of light tone below. If the pilasters were columns this would not be necessary. The base treatment too low and thin. Color scheme excellent.

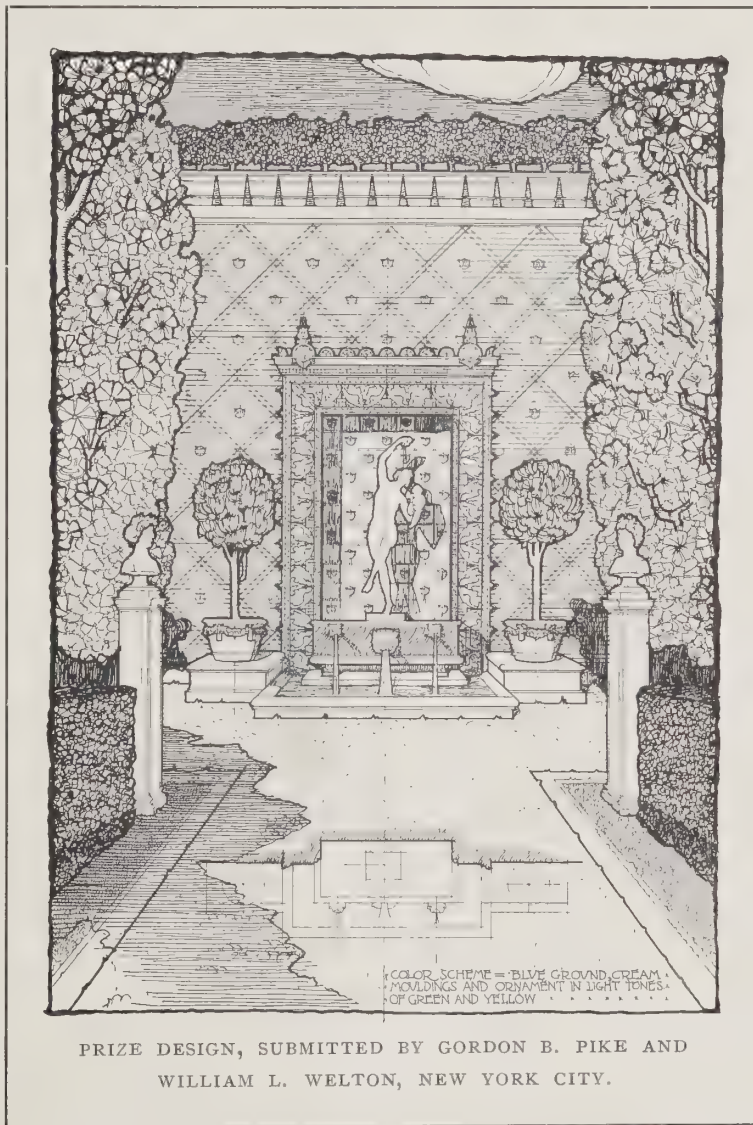
The design by William Stanley has a merit of refinement; it has little study in its relations to the ground or to the wall, being apparently applied, not incorporated with it. The faience panel and architectural frame set against the wall are well designed and delicately drawn. It is doubtful whether the wall should show between the panel and the pilasters, as its color surface becomes too small.

Another design submitted by Gordon B. Pike and William L. Welton is

excellent in its general conception, although relative parts are not in harmonious scale with each other; the mask especially being too large and the vases as terminals ineffective and unnecessary, as are the scrolls on either side of the entablature.

Of the many other designs submitted some have merit while others have none. As they have not been selected for publication, it will be unnecessary to refer to them specifically here. Their owners will find a brief criticism attached to each design.

C. HOWARD WALKER,
Judge for the Competition.



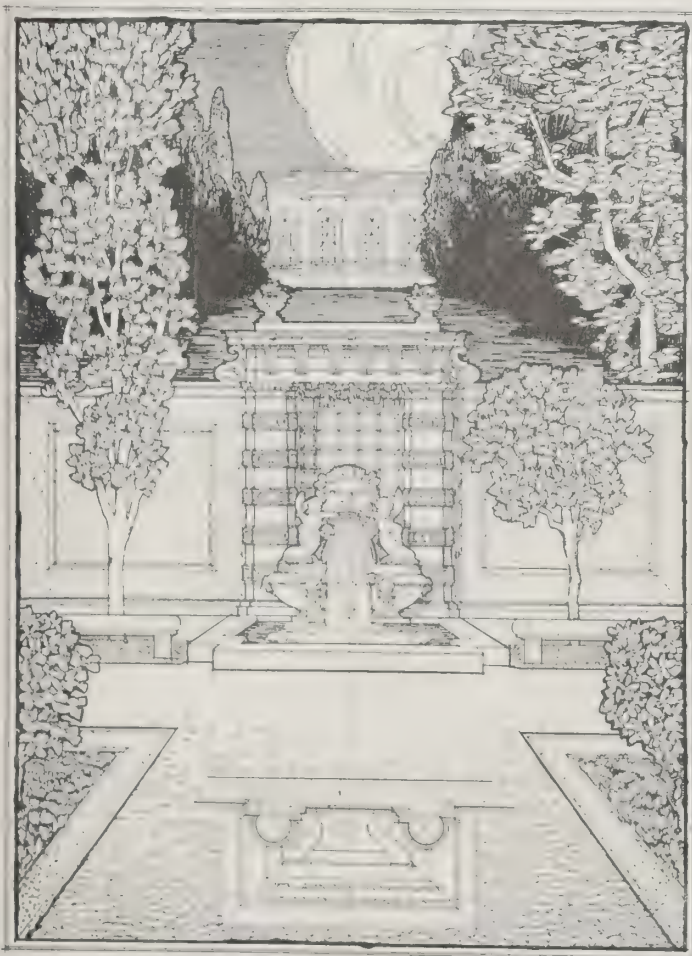
PRIZE DESIGN, SUBMITTED BY GORDON B. PIKE AND
WILLIAM L. WELTON, NEW YORK CITY.



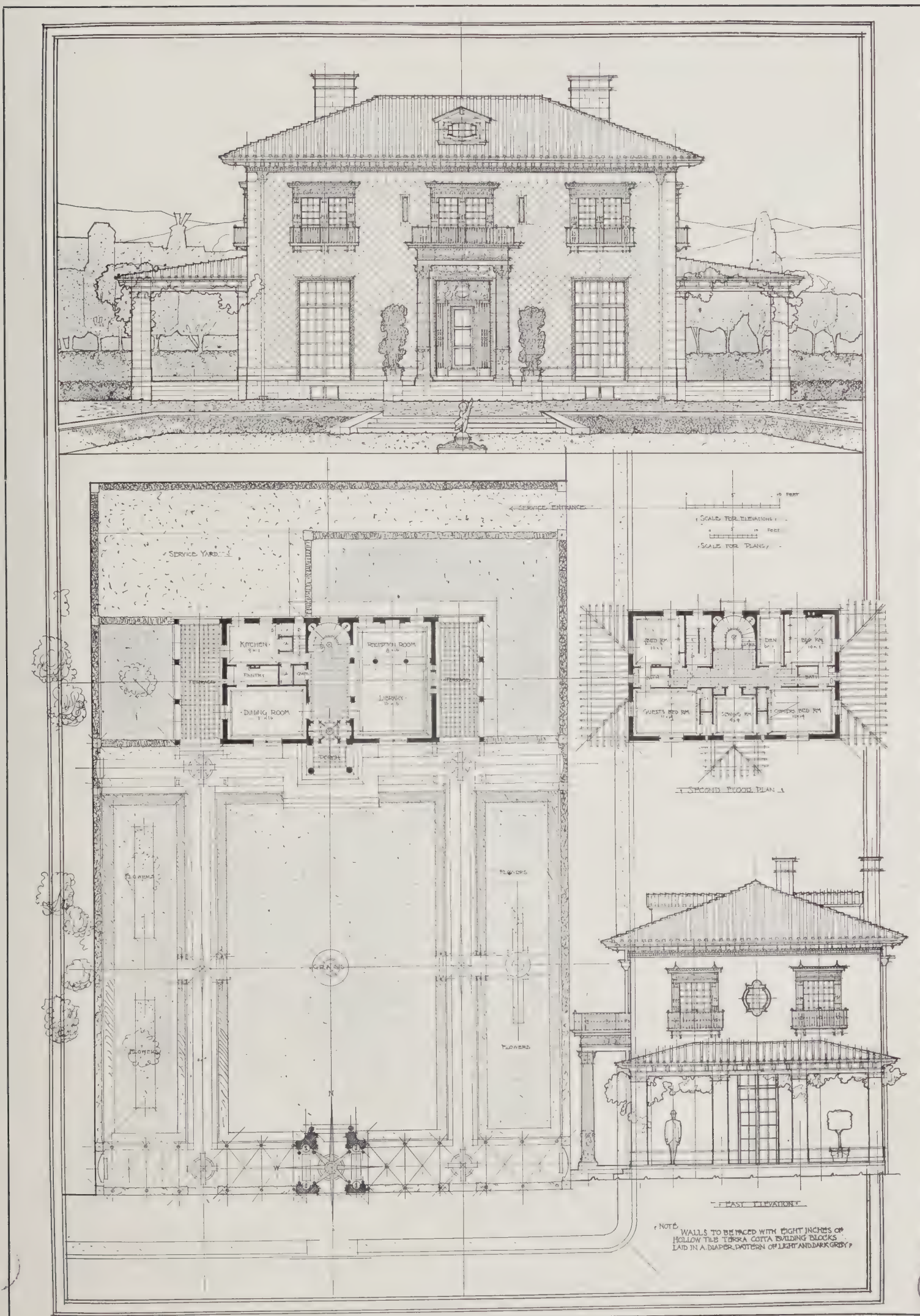
DESIGN SUBMITTED BY GEORGE G. WILL, BOSTON.



DESIGN SUBMITTED BY WILLIAM STANLEY, BOSTON.

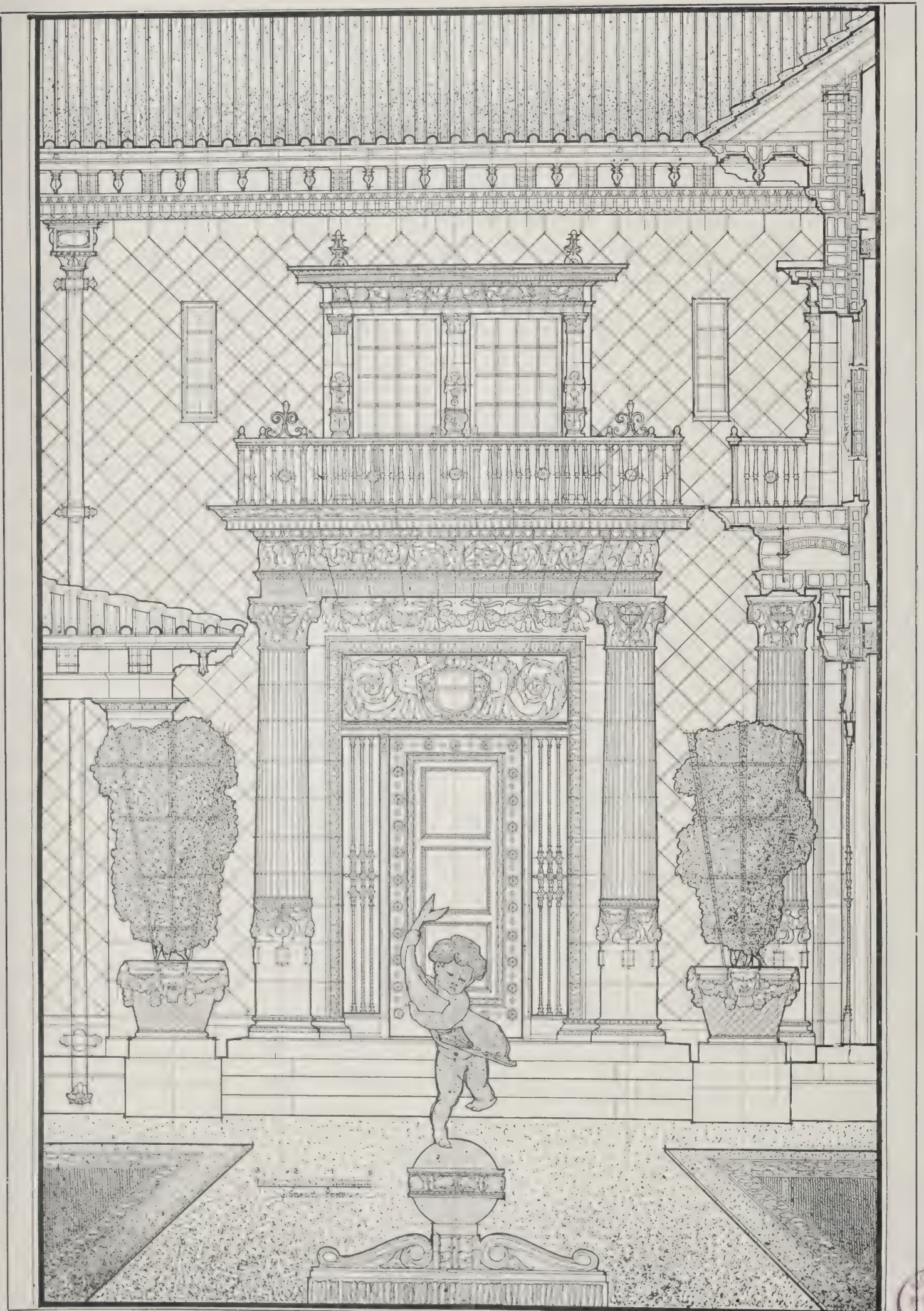
DESIGN SUBMITTED BY GORDON B. PIKE AND WILLIAM
L. WELTON, NEW YORK CITY.

DESIGN SUBMITTED BY W. J. FREETHY, BOSTON.

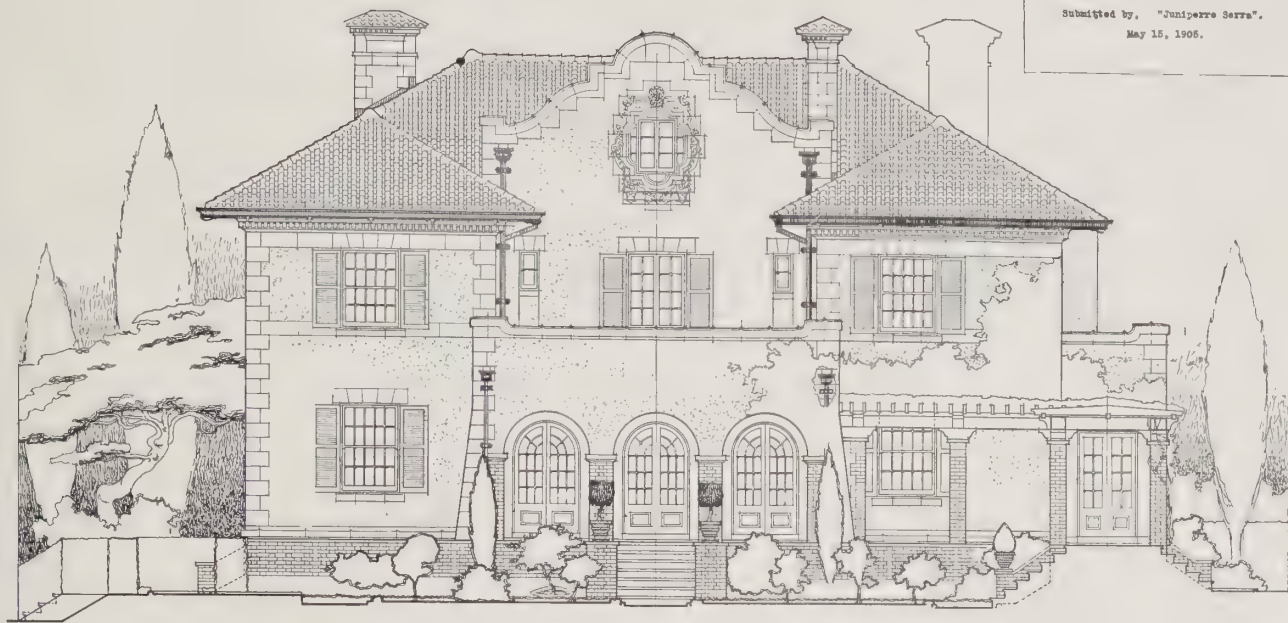


FIREPROOF HOUSE COMPETITION.

Mention Design, Submitted by Gordon B. Pike and William L. Welton, New York City.

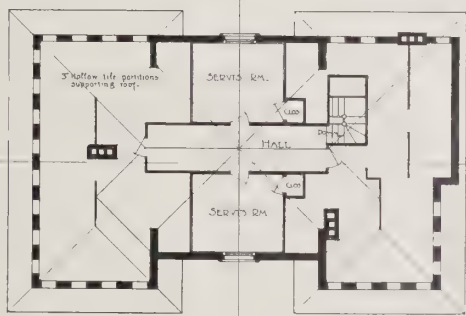


FIREPROOF HOUSE COMPETITION.
 Details, by Gordon B. Pike and William L. Welton.



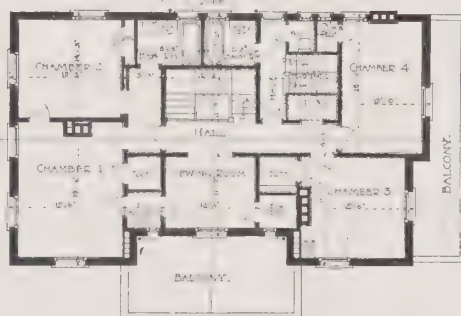
"The Brickbuilder"
Competition for a Fireproof House.
Submitted by, "Juniperre Serra".
May 15, 1905.

GARDEN ELEVATION
SCALE: 4 FT. = 1 IN..

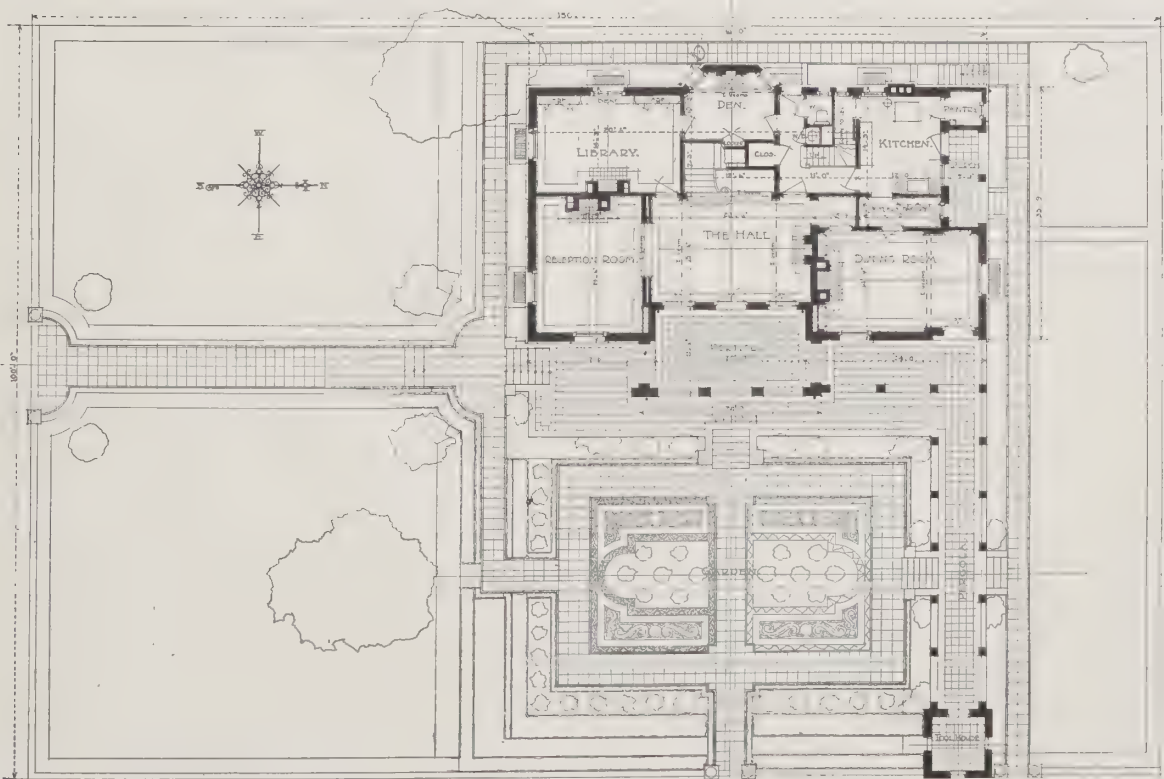


ATTIC PLAN

SCALE: 8 FT. = 1 IN..



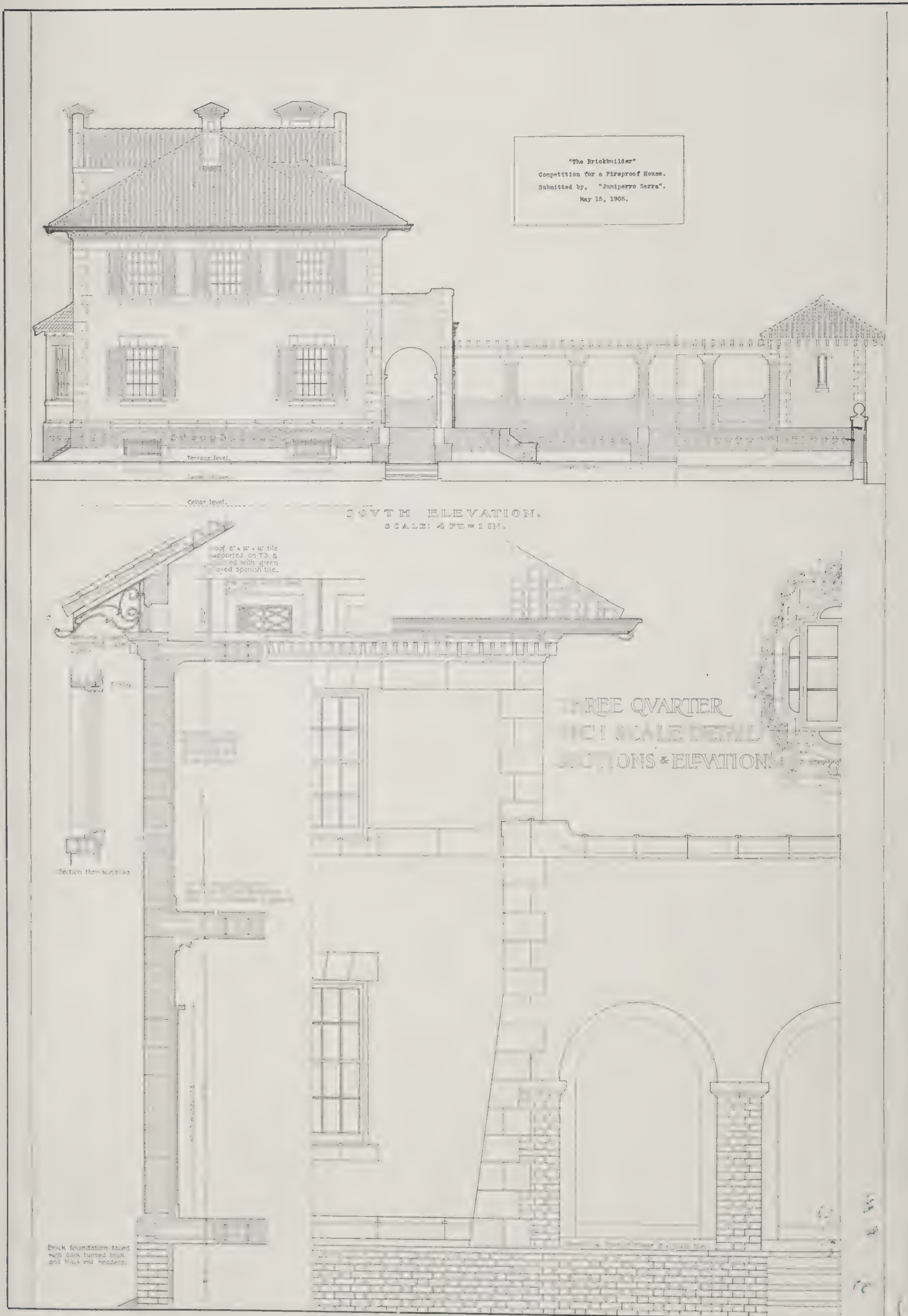
SECOND FLOOR PLAN



FIRST FLOOR PLAN

FIREPROOF HOUSE COMPETITION.

Mention Design, Submitted by Walter E. Pinkham, Washington, D. C.



Editorial Comment and Selected Miscellany

COLUMBIA UNIVERSITY YEAR BOOK.

IT is difficult to say anything new about a year book of any school of architecture. Publications of this sort are always interesting. The school work, although much



GARAGE FOR AUGUST BELMONT, ESQ., HEMPSTEAD, L. I.
Built of Terra Cotta Fireproofing Blocks.

the same each year, never fails of interest, and any one who has the welfare of the profession at heart is glad to welcome the volume and to study over the students' work. The year book as an epitome of the architectural courses has, we hope, come to stay. Its value to the profession may be slight, but as an incentive to the young men, as a presentation of what the school is trying to do, as a very creditable introduction to the architectural courses, the year book of Columbia University is certainly to be praised in every way. Especially are we glad to note the appreciation which it gives of Mr. McKim, whose portrait is placed on the first page "in grateful recognition of his liberal support and active interest in the Columbia School of Architecture."



DETAIL, EDISON ELECTRIC POWER HOUSE, BOSTON.
Showing wall treatment, with Enameled Brick and
Grueby Faience Tiles.

A FIREPROOF GARAGE.

THE new Garage for August Belmont, Esq., Hempstead, L. I., has walls of 6-inch Phoenix hollow blocks reinforced by band-iron, and piers of same materials as the walls, 12 inches by 12 inches. Through the center of the building, resting on piers, front and rear, is a 15-inch steel girder, lower web and flange thoroughly protected by 3-inch shoe tile and porous terra-cotta brick. On these are thrown 12-inch Herculean arches, giving clear floor spaces of 23 feet by 37 feet.

The roof is of red clay tile. The front sliding doors, Kalamien, with wire glass panes. The ground floor and approach is granolithic, with a pit in the center for the chauffeur, formed of 6-inch Phoenix blocks. In one corner is a fireproof closet, built of 4-inch porous terra-cotta blocks, with fireproof door and wire glass window. The Garage will accommodate six touring cars and cost, complete, \$3,000.



DETAIL BY CHARLES E.
BURGE, ARCHITECT.
Conkling-Armstrong Terra
Cotta Co., Makers.

NEW BUILDING METHODS IN LONDON.

IN rebuilding herself in twentieth century fashion, venerable London has just perfected a novel institution designed to give a severe baptism of fire to all materials which are expected to make her new buildings practically unburnable.



DETAIL BY F. C. SAUER, ARCHITECT.
Northwestern Terra Cotta Co., Makers.

Fireproof structures are not a conspicuous feature of old London, but it is now to be very different. Builders are determined, too, not to be fooled in their search for proper materials. An outgrowth of this determination is the new testing station of the British Fire Prevention Committee for the scientific determination of the fire-resisting qualities of various materials used in building, and



DETAIL BY WRIGHT AND POLK, ARCHITECTS.
Gladding, McBean & Co., Makers.



FIGURES IN TERRA COTTA.
George B. Post & Son, Architects.
Perth Amboy Terra Cotta Co., Makers.

for the practical trial of fire alarms and fire-extinguishing apparatus.

The testing plant consists of a number of specially constructed huts with gas heating apparatus so arranged that very high temperatures can be obtained. The records of temperatures are taken by pyrometers, and when it is desirable, photography is employed to get a permanent record of the appearance of the material after it has passed through the heat or water test. The members of the British Fire Prevention Committee comprise almost all the leading technical officials, civil engineers and architects, and as the advantages of a favorable report of a test by this committee is so great, that body is overrun with applications for tests from American, European and English manufacturers.

The first building material to come before the committee on the day the new testing station was opened was a hollow tile fire-proofing manufactured by a Pitts-

burg firm, and used in most of the biggest and safest American skyscrapers. This material was subjected to a temperature of 1,700 degrees for four hours and then flooded with water, but came through the test unscathed. Another American firm making a fire-resisting door had similar good fortune.



SECURITY NATIONAL BANK BUILDING,
MINNEAPOLIS, MINN.
F. B. and L. L. Long, Architects.
The building is faced on three sides with Cream Satin Finish, "Tiffany" Enameled Brick, and ornamented by Glazed Terra Cotta of similar shade.



DETAIL BY ROBERT MAYNICKE,
ARCHITECT.

Excelsior Terra Cotta Co., Makers.

All the materials are classified by the International Fire Congress standards as affording "full," "partial" or "temporary" protection. The committee's charges are only intended to cover the expenses incurred in making the tests, and in this way makers of building materials, systems of construction or appliances, are given an opportunity to obtain official reports as to the efficiency of their specialties, below the cost usually involved in such investigations, the committee experts serving without pay.



BLOCK OF INEXPENSIVE HOUSES, BOSTON.
Built of Shawnee Brick. Made by Ohio Mining and Man'f'g Co.
Waldo Bros., Agents.



PART OF ROW OF HOUSES AT BALTIMORE, SHOWING
NOVEL USE OF ROOFING TILE.
Made by Edwin Bennett's Roofing Tile Works.



DETAIL BY LONG & LONG, ARCHITECTS.
American Terra Cotta & Ceramic Co.,
Makers.

The result of the committee's work must be the establishment of such strict standards for fireproofing that a good many of the materials that now pass under that name will be displaced in favor of building methods and materials that will stand the severest demands made on it in actual use, for all of the committee's investigations are based on the practical purpose in view.

IN GENERAL.

It should have

sooner or later, to the new Cockspur Building, just opened in London, which contains the offices of all the lines combined in the International Mercantile Marine Company, better known as the "Ship Trust." Heretofore the steamship offices in London were scattered broadcast. Now they are concentrated in the Cockspur Building, located in a place easy of access, a block or two from Trafalgar Square. Any one can find



DETAIL BY NEW JERSEY TERRA COTTA CO.

been stated in connection with the illustrations of the accepted designs for the new Masonic Temple, Brooklyn, shown in THE BRICKBUILDER for July, that Pell & Corbett were associated with Lord & Hewlett as architects.

Hobart Brown Upjohn, Architect, announces that he has opened an office in the St. James Building, 1133 Broadway, New York.

G. Alexander Wright, Willis Polk and Louis Christian Mullgardt announce



PUBLIC SCHOOL 165 NEW YORK CITY.
C. B. J. Snyder, Architect.
Built of Brick made by Kreischer Brick Manufacturing Co.

that they have associated themselves under the title of Wright & Polk, L. C. Mullgardt, Associate architects; offices 124 Sansome Street, San Francisco, Cal.

We announce with regret the sudden death of Mr. Frank L. Blake, who has been for five years past associated with Robert C. Martin & Son, in New York City. Mr. Blake was highly esteemed by all who knew him and his loss will be severely felt.

About nine out of ten Americans who go abroad will wend their way,

Trafalgar Square, and therefore any one can find the place where he must go to fix up his steamship tickets and arrange other details of his trip abroad.

This new Mecca for the American tourist in London is American all the way through. It was put up by American builders with American materials and is classed among the best examples of the modern types of architecture which are springing up in the midst of old London. The speed with which the building was

run up was the marvel of the day in London, and its completion, a few weeks ago, was made the occasion for a good many hard knocks about the deliberate methods of British builders. The building is a steel-frame structure, the hollow-tile fireproofing material for which was im-



DETAIL BY HOYT & MCINTOSH, ARCHITECTS.
New York Architectural Terra Cotta Co., Makers.



SADDLE AND CYCLE CLUB HOUSE, CHICAGO.
Jarvis Hunt, Architect.
Built of Terra Cotta Fireproofing Blocks and Roofed with Ludowici Tiles.



HOUSE AT GRAND RAPIDS, MICH.
W. G. & F. S. Robinson, Architect.
Built of "Ironclay" Brick. F. H. McDonald, Agent.

ported from Perth Amboy, N. J. One of the first fire-proof buildings erected in London on an American model, it is attracting a good deal of attention from English builders, and partly as a result of this and partly because American fireproofing has lately passed severe tests at the hands of the British Fire Prevention Committee, American steel-frame, fireproof construction is sharing largely in the building boom now in progress in London.

Fifty thousand white bright finish Norman flat enameled brick, made by the Tiffany Enameled Brick Company, will be used for the wainscoting of the service portions of the new house for Henry C. Frick, Esq., on the North Shore of Boston.



DETAIL BY NEWHALL & BLEVINS, ARCHITECTS.
Atlantic Terra Cotta Co. Makers.



DUTCHESS COUNTY COURT HOUSE, POUGHKEEPSIE, N. Y.
Wm. J. Beardsley, Architect.
Roofed with American S. Tile.
Made by Cincinnati Roofing Tile and Terra Cotta Co.

NEW BOOKS.

THE SANITATION OF A COUNTRY HOUSE. By Dr. Harvey B. Bashore. New York: John Wiley & Sons.

While municipal hygiene has made much progress during the last hundred years, the rural districts still cling to their old-fashioned ways, still trust in Providence and the "old oaken bucket."

When we find that our summer

resorts on seashore and mountain sometimes bring sickness instead of health, that our springs and our brooks may bear the germs of disease; when we find that there are rural localities which have more typhoid fever per population than our great cities, that there is actually less danger of getting typhoid fever in New York City than in a good many country places; when we find that cities are spending millions for filter plants and yet receive twenty-five per cent of their typhoid from the country; when we find all this and more, too, to be actual facts, is it not worth while to think about sanitary reform?

To make the country as healthy as the city—contradictory as it may seem—is the aim of this work.

PARTNER WANTED—For architectural office in Minnesota. First-class man and hustler. Of middle age or young. Must be good designer, especially in terra cotta. Address "West," care of "The Brickbuilder."

THE SCHOOL OF ARCHITECTURE

University of Pennsylvania.

THE FOUR YEAR COURSE offers full professional training, with an option in Architectural Engineering, leading to the degree of B. S. in Architecture.

THE GRADUATE YEAR affords opportunity for advanced work in design and other subjects, leading to the degree of M. S. in Architecture.

THE TWO YEAR SPECIAL COURSE for qualified draughtsmen offers advanced technical training, yielding a Certificate of Proficiency.

THE UNIVERSITY also grants advanced standing to College graduates; offers a combination of liberal and technical courses whereby the degrees of A. B. and B. S. in Architecture can be taken in six years, and conducts a Summer School in which architectural studies may be taken.

For full information address

DR. J. H. PENNIMAN, DEAN, COLLEGE HALL,
UNIVERSITY OF PENNSYLVANIA,
PHILADELPHIA, PA.



DETAIL BY GEORGE M. WALGROVE,
ARCHITECT.

Standard Terra Cotta Works, Makers.

THE BRICKBUILDER.

VOL. 14

SEPTEMBER 1905

No. 9

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FAÇADE OF CHURCH OF SAN DOMINGO, SALAMANCA, SPAIN.

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THE BRICKBUILDER

VOL. 14 No. 9 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY SEPTEMBER 1905

THE BRICKBUILDER.

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ADVERTISING.

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Advertisements will be printed on cover pages only.

COVER DESIGN COMPETITION AWARD.

ON Wednesday, August 23, Messrs. Chester H. Aldrich, Bertram G. Goodhue, Jules Guerin and Henry P. Kirby, who had been requested to serve as a jury of award, met at the City Club, New York, to examine and report upon the drawings submitted in competition for a prize of one hundred dollars offered by the publishers of *Indoors and Out* for the cover design adjudged the best.

This competition, it must be confessed, was, to a considerable degree, disappointing, despite the large number of drawings submitted. In the opinion of the jury, the average of merit was regrettably low, even the prize-winning design being by no means so successful as might have been expected.

The awards were made as follows:

First prize of one hundred dollars, Carroll M. Bill, Boston, Mass.; first mention, Claude F. Bragdon, Rochester, N. Y.; second mention, Herbert William Meyer, Brooklyn, N. Y.; third mention, Howard Sill, Baltimore, Md.

After making the above award, the publishers availed themselves of the terms of the competition, which permitted the purchase of any drawing, and selected for use the design of Howard Sill, which seemed in their opinion best suited for the purpose.

CHARLES A. CUMMINGS.

BY the death on August 11 of Mr. Charles Amos Cummings, the architectural profession has lost one of its most honored members. He was one of the organizers of the Boston Society of Architects in 1867, its president for many years, and was closely identified with that organization up to the time of his death. As the senior partner of the firm of Cummings & Sears he did some of the most notable buildings in the city of Boston, all of which were marked by a quiet refinement of detail and unity of conception as a whole which were considerably in advance of most of the work performed in the early seventies. The New Old South Church, the Steinway Hall, now practically obliterated by remodeling, and a number of commercial buildings, the bulk of which were erected shortly after the great Boston fire of 1872, all testify to Mr. Cummings's marked abilities. He retired from business a number of years ago, having ample means to indulge his literary and artistic tastes. He wrote a number of excellent works upon the subject of architecture, and his critical essays appeared in the leading architectural papers, always commanding attention and respect. By his will he leaves to the Museum of Fine Arts, of which he was a trustee, the sum of fifty thousand dollars for the purchase of photographs, casts, or other reproductions of architecture, the selection to be made with the advice of the Boston Society of Architects. His whole life was a consistent, continuous growth, and his achievements reflect the highest credit upon the architectural profession.

ALFRED WATERHOUSE.

NO one who had the good fortune to have met could ever forget the strong personality of Alfred Waterhouse, the celebrated English architect who died during the past month in his seventy-sixth year. All his work was carried out in the best embodiment of what has been classed as the Victorian Gothic. His Town Hall and Law Courts of Manchester and his Natural History Museum at South Kensington are among the most successful buildings which have been erected in England, and would alone have been sufficient to establish his title to high architectural ability. In addition he has done a quantity of most excellent public and private work, and he enjoyed all his life an excellent practice. He was a president of the Royal Institute of British Architects, received its gold medal in 1878, was a corresponding member of the Institute of France, and an associate in the academies of Vienna, Milan, Brussels and Berlin.

Ecclesiastical Architecture.

THE CATHOLIC CHURCH.

PAPER I.

BY REV. JOHN TALBOT SMITH, D. D.

THE aim of this article is to benefit conscientious architects in their endeavor to serve both religion and art by the erection of artistic and useful church buildings. The present century holds brilliant promise for the workers in the ecclesiastical field. For the Roman Catholic side of the house it may safely be said that immense work is to be done this century in the building of churches, schools, educational and charitable institutions, convents and monasteries, mission houses and parochial residences. The Catholic body in the United States and Canada numbers more than fifteen millions; add Cuba, Porto Rico and the Philippines, which have lately come within the sphere of our influence, and include Mexico, whose relations with us become more intimate every day, and the dullest imagination can hardly fail to see the splendid field of opportunity now open to the architect.

The Catholic peoples are church builders par excellence, and the American branch of the Catholic body in all probability bears away the palm from its brethren on that score; for the simple reason that America is a new land and all the necessary work of building had to be done within a short period. A century back there might have been fifty Catholic churches in this country, whereas to-day there must be more than ten thousand. It would not be rash to predict that the number will be easily doubled by the end of this century. Immigration from Ireland and Germany has not ceased, though it has greatly diminished; but the loss has been more than made up for by the immigration from Poland, Italy, the Slav countries and the Orient. Churches must be built for these peoples; schools, charities, colleges and mission residences must be built for them; where they are numerous their buildings will be, must be magnificent, for it is their nature to build magnificently, if not always in the best taste; though they may be parsimonious in other matters, the temple with them must be the house beautiful. One may suppose this is mere commonplace to the experienced architect, yet the younger men are aware of it only vaguely.

It may seem unpractical to include our new possessions in the field of possibilities, as well as Cuba and Mexico. Yet it should be remembered that the leading prelates and many of the clergy in these new countries will be in time Americans by birth or training; they will seek their supplies from the country with which they are familiar; and naturally they will introduce into the new territory the architectural forms most common with us; even the natives will find it convenient to adopt many of our improvements in building. As to Cuba and Mexico, already the imitation of American forms has taken root, and the leading clergy get some of their ecclesiastical necessities or ornaments from our merchants.

The building of a church means also its ornamentation, and a host of arts will be called upon to complete what the architect has only begun, it may be said. Altars, statues, candelabra, sacred vessels, vestments, rich em-

broideries, carpets, windows, frescoes must be supplied, and will give profitable employment to thousands of artists and craftsmen. As each nation has its own traditions about the church and its ornamentation, most curious demands will be made upon architects and decorators. *Adaptation* will be the watchword of the century in every department, and it will be no small task for the interested to graft ancient traditional forms artistically on the American conditions. The commercial architect will have no scruples and no difficulties in such matters. So that he gets his fee the Mahometan minaret may jostle the Gothic spire, and the Byzantine roof cap an American rectangle. The conscientious architect, as usual, will have the difficulties, the honors and the lesser money recompense. This seems to be inevitable in ordinary human conditions. Man cannot win equal success in the market and the studio.

If the prospect is so fair in the Roman Catholic field alone, architect and craftsman must exult over the whole prospect, which takes in the future achievement of all religious denominations. Surely there ought to be deep inspiration and stimulus in conditions so promising. Of course there are drawbacks, and the picture does not lack dark shadows. It is a drawback, for example, that the Catholic immigrants are very poor, that money will not be plentiful and that quantity and color will often take the place of artistic form and exquisite tone. This cannot be helped, and the architect will merely have to do his best with the inevitable. On the other hand, the older parishes will make up for this condition by building more artistically and more expensively. The blunders of the past will also provide a drawback of serious strength. The clergy have long memories and strong traditions. The commercial architect, the incompetent architect and other frauds have fooled them often, led them into the quagmire of debt or into public ridicule by nightmares of buildings, or, led astray by their own confidence, the priests often built beyond the financial strength of the parish and died in the effort to remove the burden. The buildings erected under such conditions are monuments of warning, perpetual lessons in folly to the next generation. Only the born fools will be fooled a second time by the same impostor or led into a repetition of popular follies by their own vanity.

The churches of the coming century will be finer than those existing, better suited also to the conditions. They will cost no more than the parish can easily afford, will carry no waste material in the shape of lofty walls, ornamental towers and flying buttresses, and will be built with less regard to the neighboring cathedral and more to the comfort of the trustees and the congregation. The grand church is now so intimately connected in the minds of the Catholic clergy with the grand debt, which often kills two men to pay, that very few pastors will undertake it unless in the proper places. It is the ambition of every parish priest to build a handsome church. The ambition remains in a modified form; if it can be attained without heaping up an enormous debt.

From every point of view the situation is favorable, and the architect may fairly be said to control the situation. At least he has the key to it and may secure the full control if he so desires. He alone has the knowledge and skill absolutely necessary for the erection of safe and

beautiful public buildings. The builders of temples and schools know that nothing substantial can be accomplished without him, and they are at all times willing to be led by him, too willing, in fact, if experience teaches anything. In this country the Catholic priest is always the financial manager of the parish and must look after the revenues. When church or school or residence is building, the task of collecting the funds and supervising the architect is large enough for him. For the beauty, strength and fitness of the building he must of necessity depend absolutely upon the architect, and he is more than willing to leave all the details to that official.

I know that there have been many bitter experiences which proclaim a contrary condition. The complaint has often been made by architects that the Catholic priest is unapproachable and difficult to deal with in business matters. It surprised me to hear a young architect say that he had never acquired the courage to approach a Catholic priest and more than once had turned away from the door of the parochial residence in sheer despair of getting a good understanding with a being so incomprehensible as its resident. While this shyness may be explicable, it has little justification in fact. The Catholic clergy are by the nature of their profession very approachable, but at the same time, by reason of rather unpleasant experience with impostors, somewhat distant and reserved in manner and speech. They have little or no prejudice about dealing with non-Catholic professional and business men, and are quite willing to listen to the expert without regard to his faith or creed. Whatever distrust they may now display towards architects has been born of the blunders of architects themselves or of misunderstandings or of traditions current in the clerical circle. In any gathering of clergymen, when the subject of building is brought up, one may hear many stories of the failures, the blunders and the rascalities of incompetent and dishonest architects: how Jones submitted plans for a building to cost fifty thousand, and it actually cost one hundred thousand; and Brown put up a church so defective that to keep it from falling an immense sum had to be expended; and Robinson stood in with all the contractors and made a round sum by accepting inferior material and inferior work. These are current tales, but at the same time there is no lack of praise and commendation for the architect who has been faithful and successful.

It must be acknowledged that in many instances distrust of the architect or fear of his prices has driven some clergymen into dispensing with the professional and confiding their building interest to the mason and the carpenter. The results have regularly been so unfortunate as to prevent repetition of the blunder. The clergy are naturally quite easy prey to clever schemers in the matter of building. What they know of architecture is acquired somewhat accidentally in the practical work of the mission. They find it less difficult to deal with the carpenter and the mason than with the accomplished architect, since they can put a check on the craftsman's expense before it has jumped into the thousands. Their very ignorance of architecture leads architects to the supposition that dealing with them is next to impossible, particularly when it comes to the settling of a question of taste and of principle in architecture; but this supposition is incorrect. As men of education, of some

experience, of observation, influenced by their clerical associations, they know their own limits, even while not qualified to judge of the limitations of a particular architect. They are willing to learn and willing to take instruction from qualified teachers.

I repeat, therefore, that the architect holds the key to the situation, and may choose his own vantage ground. That he has not already done so, that he stands without the charmed circle, not knowing how to get in, half convinced that entrance is impossible, is his own fault. His own shyness or his ignorance of the conditions may be to blame. There are two elements in the building problem among Catholics: the standard of building, the ideal we may call it, and the priest who builds. Therefore the architect who grapples with that particular problem must ask himself two questions: what is the traditional church for Catholics, and what kind of a church does the priest desire? Upon his answer to these questions will depend his success. Let us take for discussion the second element in the problem.

The priest is the church builder among Catholics, and his wish is law. This statement suffers some modifications according to the nationality of the people, but it may be taken by the architect as a safe statement in most circumstances. Even where the priest is simply the head of an executive committee, his influence dominates. The preliminaries, before an architect is called in, usually determine the size and general character of the church, the ability and willingness of the people to undertake the structure, and the good will of the bishop of the diocese. These things made certain, the architect is asked to submit his plans, based upon the instructions from the priest. These plans are to be submitted to the bishop and his council as soon as accepted by the priest and his committee of trustees. There is no question that a priest will build as handsomely as the funds will permit; in fact, he will stretch a point and build slightly beyond his means. It is the ambition of every parish priest to have a fine, richly adorned church. When he has determined upon the figures to be paid for the new building, the architect may be absolutely certain that the priest cannot afford a penny more. His parish revenues will not provide a dollar beyond. This is a fact to be well remembered. So often has it been forgotten by architects of the past that most priests stand armed against present architects. More than one architect lost his opportunities by exceeding the first estimate, or by swallowing up in the structure the cost of adornment, so that for years the church interior stood colorless and bare, an undecorated void, an eyesore and an irritation to pastor and people.

The honest and prudent architect must therefore keep this rule in mind: never to exceed the first estimate. Moreover he must never forget that the estimate is to cover the entire cost of decorating and furnishing the church interior. It will not do to offer the plea that he forgot, or did not foresee, or underestimated; it is his business to remember, to foresee, to estimate properly; for that he is employed. The agreements between architect and pastor should be in writing always, every item should be covered, every change discussed in all its bearings, and then placed properly in the written

agreements. As a rule the priest is more than generous in his dealings with architects and builders; in consequence, when pinched by the blunders or inefficiency or dishonesty of his aids, he is apt to be more than severe. It is unnecessary to criticise this very natural consequence. I recall one priest who built the foundations of his church on the generous and confiding plan, and was successfully robbed by both architect and builders; therefore, when he arrived at the work of the superstructure, he employed a superintendent at four dollars a day to see that both architect and builder lived 'up to their agreements; and the necessity of this caution was proved daily in the rejection of unfit material accepted by the architect from the builder, and in other important matters.

What style of church does the average priest desire to build? That question may be answered easily by the architect from the general character of the churches in a given neighborhood. Usually a priest wants a church like some other that he has seen and admired. The clergy are imitative and conventional, but are not bound by conventions overmuch. The simple rectangle with Gothic steeple was the fashion for fifty years, until the clergy tired of its monotonous ugliness. If the priest knows nothing about architecture, he does know that he wants nave, transept, sanctuary and bell tower; and these being provided by the architect, there will be little difficulty in persuading him to accept almost any beautiful form of building. A casual examination of the churches built during the last ten years proves that the clergy have broken away from slavish imitation, and are willing to accept even novelties in form, provided that the traditions are not violated. The nationality of the priest must be considered in this matter. The English-speaking Catholics as a rule leave the style of church entirely to the priest and the bishop; the Germans have something to say in the committee which has charge of the building; the Poles, it is said, follow the progress of the work with jealous eye from the first plan to the last stroke of the decorator's brush, and are as ready to hang the architect for failure or blunder as to score the priest for permitting it. The Germans and Poles and Italians go in for strong decoration, the others care less for color and more for the splendid form. These facts are mentioned because the priest is influenced by them, no matter what may be his preferences. In estimating therefore the cost of decoration, the architect must bear in mind that a foreign priest will spend more and an American priest less for that item. As a rule in this country the clergy are quite catholic in their tastes, quite open to new fashions, and favorable to new methods, and therefore the architect may not always find the difficulties above described awaiting him.

Of what material will the priest build? This question may also be answered by a glance at the churches already in existence. Brick, stone and wood are all represented in all their forms in combination, showing perfect freedom of thought and independence of action on that point. Tradition favors the stone, but the funds decide the question. Here the architect will never meet with any real difficulty.

How far will the priest modify tradition? The Amer-

ican priest is a utilitarian. He has been brought up in a school which for a long time knew nothing of architecture, because there was little need for it. All that Catholics could secure in the form of a church was a hall or a cheap structure, for which they were thankful. The church builders of the first period, which closes with the year 1850, cannot be said to have founded a tradition, or even to have continued European traditions, so various, strange and inharmonious were their temples. The second period introduced the cruciform structure in many varieties, the Romanesque, and, in the great cities, a hybrid which takes its name from its one visible external feature, the façade. The prominent feature of all Catholic churches in this country is the steeple, which seems to be the only traditional characteristic. My own conclusion is that there are few traditions for the priest to modify, and that he will be found quite flexible with regard to any that may appear. His concern is mostly with the necessities. He must have, if possible, a roomy and elegant sanctuary, a good sacristy attached, a roomy nave with a middle aisle, a comfortable vestibule, a bell tower or steeple, and a handsome exterior. Outside of these an architect will have considerable freedom in his plans. It will be necessary for him, however, to keep in mind the limitations of the priest in all directions; for the priest must work within his means, satisfy his bishop and his people, and secure respectable results to meet the criticism of his associates. If novelties are to be attempted, or novel variations of the conventional or the unaccustomed, the architect should provide the priest with arguments and illustrations that explain and justify the departure from custom. These will be repeated to parishioners, committees, associates and diocesan officials, and will prepare them for the change properly. It may seem superfluous to mention these details, but not to the architect of experience. The country is full of mournful examples illustrating their aptness. To conclude on this point the architect, who has not yet entered the Catholic field, may approach the priest with perfect confidence in his fairness, courtesy, readiness to listen and general kindness.

The second factor in the problem which the architect has to deal with is the ideal church building. Tradition has established its essential form firmly, so firmly that there can be no doubts about it. All architects are acquainted with it, though various names are given to it, according to the popular variations of its substantial features. These variations are the natural result of environment. Every age has added to their number and each tribe has produced its own forms. It is not unreasonable to expect that the new world shall add its own variety, based on the new needs and the new circumstances. For the watchword of the architect during this century will have to be *adaptation*. As was pointed out in an earlier paragraph, the immigrants settling here will bring to the building of their churches their best and worst traditions, of which some will go with the new situation, and others will clash and be set aside. The architect will have much to say, if he chooses, in accepting the useful and beautiful and rejecting the superfluous.

It is not at all certain that the average architect is trained to meet the situation as it exists among Catholics.

The ideals of Protestants and Catholics in the matter of churches began to differ radically late in the last century. With the former the church building has taken on more and more the character of an assembly-room, in which the speaker and the hearers, the seeing and hearing, are of the utmost consequence. While the Catholics have not remained indifferent to the seeing and the hearing, these ideas have not at all affected the traditional features of their churches. With them the church must always bear the characteristics of the temple: prominent sanctuary and beautiful altar, space for the carrying out of the ritual and for the administration of the sacraments. The banishment of the temple characteristics in so many modern churches is quite repugnant to the religious sentiment of Catholics, as all architects know. Yet while the idea of the temple prevails with them, they have little thought of making every church they build an architectural monument like a cathedral. Some architects are possessed of this inaccurate impression. One asked me in writing, admitting that a cathedral church is an architectural monument, how far might that idea be modified in relation to a parish church, and how far might an architect go in sacrificing it to considerations of utility.

To my mind this question has no practical bearing on our circumstances. In Europe it might have. The parish church in the United States is no longer thought of as an architectural monument. Formerly the clergy who set out to build churches really built cathedrals when the revenues of their parishes enabled them to do so with ease. However, the policy of the bishops for many years has been to multiply parishes with a more and more limited membership. This policy has not only increased the number of smaller churches, it has also driven out of existence the parish cathedral. Hereafter the parish church will be of the simple character befitting its uses. As has already been said, the stately churches of the past era will not be imitated, but the less brilliant and more tasteful parish churches will be multiplied. Of course the large and wealthy parishes will continue to build splendidly as of old, the religious communities will adhere to their traditions in this matter, and their buildings will suffer no departure from tradition except in such utilities as lighting, heating, ventilating and pew-fitting. They will always strive for the characteristics of the architectural monument.

The parish church, on the contrary, will adapt itself more freely to circumstance, all the more freely that its size will have been diminished along with its congregations. With the Catholic the idea of the temple is based on the idea of the Sacrifice of the Mass. The temple is a building which protects an altar, around which gather priest and people to offer up sacrifice to God. The central point of the temple, from which all the other parts radiate, is therefore the sanctuary. Next to the sanctuary in importance is the nave or auditorium, wherein the people worship. Sanctuary and nave are the essential parts of the Catholic temple. The capable architect must therefore begin his plans from these two points. The sanctuary must be visible from all parts of the nave, therefore elevated, lightsome, noble in its lines, and, as the scene of many important ceremonies, it must be spacious, its outer rail should extend across the entire church, and the approaches to it should be of generous

width. The space between the rail of the sanctuary and the first pews should never be stinted. For the people this is the place of many ceremonies. They crowd to the rail for the Sunday communion, the children receive here the sacraments of the Eucharist and Confirmation, the bridal pair are married at the gate of the sanctuary, the dead are brought to it for the last rites. The temple is the home of the sacraments. Somewhere in the confines of the auditorium should be the baptistery, where baptism is publicly administered, and the confessionals. The vestibule is not only a means of entrance and exit, it is also the scene of many ceremonies. In my opinion that architect would make no mistake who would take his place in the sanctuary and draw the lines of his church with an eye on the points just enumerated: spacious sanctuary, roomy aisles and vestibules, baptistery and confessionals.

One might call the above paragraph commonplace unless the blunders made in these matters were known by experience; for example, roomy aisles and no space for confessional or baptistery; a fine sanctuary, with no space at or in front of the railing; sanctuary and nave out of proportion with each other, so that often the former looked like an accidental hole in the wall of the nave. Of secondary consideration, but not to be forgotten, are the utilities, such as the pews, the pulpit and the sacristy; the details of the nave in the matter of pillars, windows and the like, and the question of a basement for heating purposes and also for church assemblies. The pews are so much in use among Catholics that at least they should be comfortable and avoid the blunder of cramping the entire congregation. The pulpit is always a vexed question, for different reasons. A small church does not need a pulpit, a medium church seems to offer no space for a fixed pulpit, and the movable pulpit is unpopular, and a large church must face the problem of acoustics with any sort of pulpit. For the church of medium size a sanctuary with plenty of space close to the rail will provide room for a small pulpit. The question is one to be fully discussed with the priest, and careful experiments should be made. The pillars often obstruct the view for a number of people, but that fact need not disturb the architect. Their number is small in the average church, eight or ten at most, and perhaps fifty people may temporarily lose sight of the altar on account of them. This deprivation can be borne. The sacristy is of varying importance according to the circumstances. In many places it becomes the winter chapel for the congregation and in others the week-day chapel besides; in country churches it may contain the baptistery and the confessionals. In most churches it is simply the sacristy, where the sacred vestments are kept and where the priest prepares for the Mass. As it adds very much to the comfort of the clergy, the architect does well to discuss all the details, exit and entrance, heating and lighting, and the uses to which it may be put in the future. The basement has become an important feature of the modern parish church, particularly in the large cities, but the clergy have no love for it except on grounds of economy. It will always be kept subordinate in Catholic churches, as much underground as possible, since it is a temporary expedient; therefore the architect will always be on the safe side if in the general plan of the church the basement is made as inconspicuous as possible.

These general statements will suffer many modifications when the architect comes to deal with a particular priest and a certain set of circumstances. For the sake of economy a priest will sacrifice the spaciousness of sanctuary and aisle, and leave baptistery and confessional to shift as they may. But with particular problems of course we cannot deal in this article. The architect, having made his plans from the standpoint just described, may proceed to consider the exterior of the temple both with regard to the interior and to the particular style of architecture demanded. An examination of the Catholic churches of the country proves, I think, that the clergy are not attached to any particular form nor to any particular material. Either the Gothic or the Romanesque would be their style, where they might choose. The main problem with them is always a church large enough to hold the people. It is always an easy matter for the architect to influence them within the limits of the estimate. If, on the whole, they know little of the traditional architecture, they possess considerable taste, and have usually enjoyed some experience. As a rule they seek convenience and comfort for the church interior, and both beauty and dignity for the exterior. The steeple and the tower are favorite features, the noble façade, the spacious entrance and the dignified windows. In former times poverty allowed them only the luxury of steeple or tower; in our day a measure of prosperity has introduced numerous luxuries.

The exterior of the church ought surely on general principles to express the interior aptly. At this very point the clergy and the architects together have scored their most serious failures. The great majority of the Catholic churches in the United States have little external expression beyond that of a pile of brick, stone or lumber emphasized by a steeple. Certainly they express nothing of the spiritual beauty that reigns within. Whoever may be to blame for these unsightly structures, no repetition of them should be permitted, and none is necessary. The smallest church can be built beautifully, and the clergy are willing to make sacrifices to secure that beauty. I recall a town which had three churches, of which the poorest and cheapest was the most beautiful. It was not the Catholic church, but every priest that saw the little church expressed the wish that such simple and effective beauty could be oftener expressed in our temples. As little as they might have known about architecture, their taste was correct and sure enough to recognize beauty of form when they saw it. It looks to me as if architects do not appeal to this sense of beauty; or else they make their suggestions so expensive that the clergy recoil. All that can be said here about the exterior of the church is this: the priest and the architect should be able to secure, after ample examination of styles and plans, just what the circumstances need. There are no binding traditions for the parish church except, the simplest of all, that the building look like a true temple of God when finished, and be as far as possible from the appearance of an auditorium. Whatever style of architecture be adopted, let it be consistent throughout: let there be no experiments and no composites. A successful experiment gets no criticism, but most experiments are failures; and as for composites, only genius can get anything beautiful out of them.

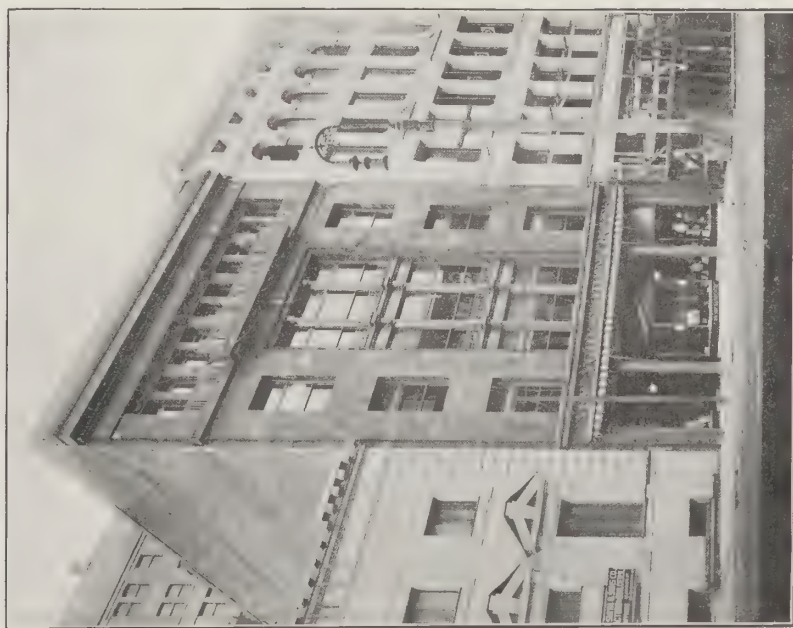
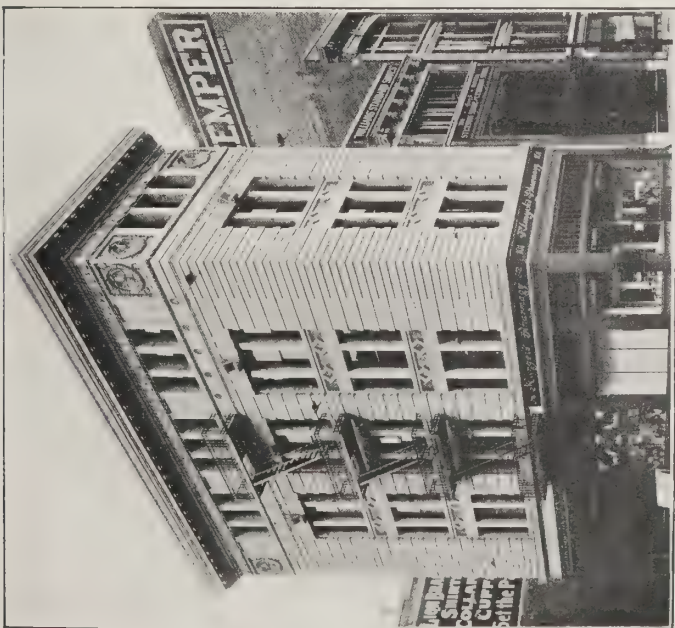
The Rebuilding of Baltimore.

WHAT HAS BEEN DONE IN ONE YEAR.

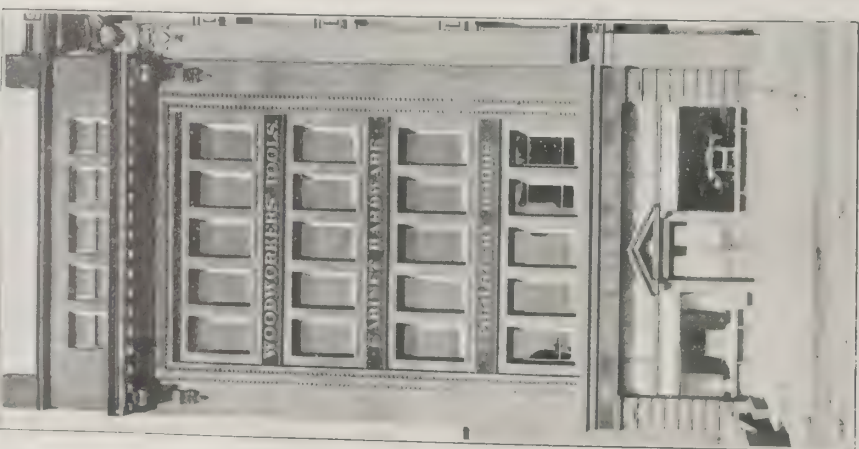
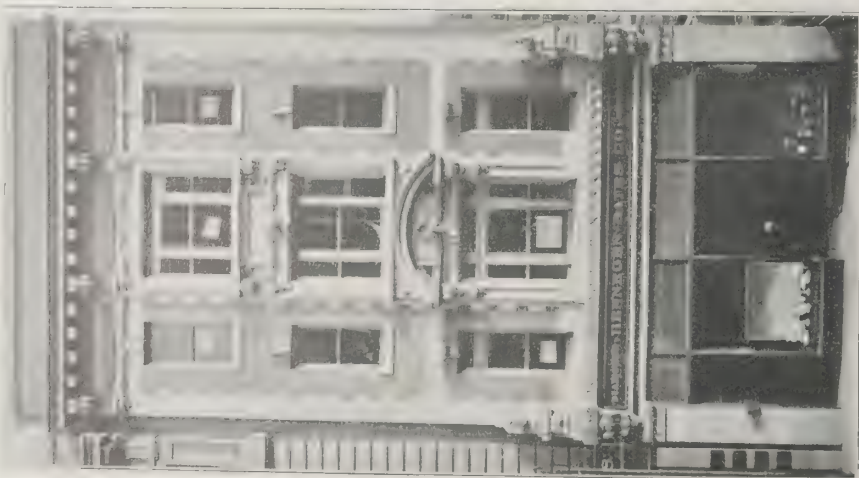
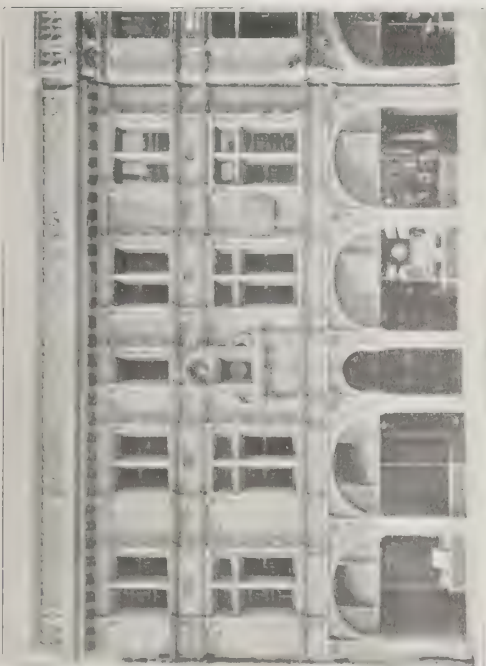
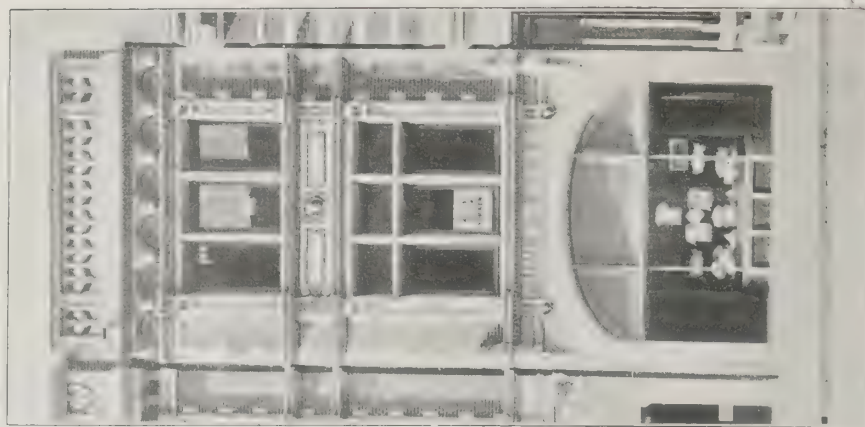
THE old saying, "It's an ill wind that blows nobody some good," may aptly be applied to the results occasioned by the Baltimore fire. The same wind that carried destruction in its path developed new conditions and created new opportunities, which, if seized at the moment, would have made Baltimore a model city. In some cases advantage of these opportunities was taken; but in others they were combated and wholly disregarded, because the prevailing ideas of reconstruction were based upon what had been, not what might be. The future was considered, but not upon the scale the situation demanded. Fearing a prohibitive tax rate, the people adopted only in part the schemes for municipal betterment that were suggested. The chance was offered to lay out and construct the burned area upon magnificent lines, but the people failed to comprehend the results that would accrue, or, comprehending, failed to profit by their knowledge, and the opportunity passed. * That these fears of a prohibitive tax rate were without foundation has been proven, for dilapidated structures which once existed have given place to handsome modern buildings, causing an enormous increase in the taxable basis and consequently a considerable reduction in the tax rate.

But despite the failure to embrace the opportunity for grand schemes of municipal improvement, a new spirit governs building in Baltimore. Formerly business had been conducted under conditions which retard rather than advance the progress of a large city, such as narrow and congested streets, some with heavy grades, and dilapidated structures unequipped with modern facilities for the proper handling of the city's trade. A system of conservatism seemed to govern all methods of procedure. But ere the smoke had rolled away the city had taken the first step towards progress and "Greater Baltimore." Then came the revival,—the renaissance. A new spirit was born. The citizen was awakened from his stupor and was ready to advance; the refusal to accept the tender of outside aid illustrates the spirit which was to govern the future. This same enthusiasm now prevails and invades all lines of work. The citizen is conscious of his needs, and when he is thoroughly aroused there can only be one result. It means a desire for improved conditions, such as wider and better paved streets and better architecture. The desire for something better must necessarily influence the means to produce the end.

The appointment of an Emergency Committee several days after the fire was the first step. The committee was composed of men of recognized business ability; but it is greatly to be regretted that in the selection of the members not enough recognition was given the architect and engineer, the very men upon whom depended the success and proper execution of the various schemes submitted for adoption. This Emergency Committee was appointed for the purpose of considering the problems involved in the improvement and rebuilding of the burned area, and continued in office until an enabling act could be passed by the legislature and a permanent commission formed. The state legislature then in session soon passed this enabling act, and the Burnt District Commission was named just a month after the fire. The Commission was



A GROUP OF NEW STORE AND LOFT BUILDINGS. Sperry, York & Sawyer, Architects.



A GROUP OF NEW STORE AND LOFT BUILDINGS. Wyatt & Nolting, Architects.



MERCHANTS CLUB. York & Sawyer, Architects.



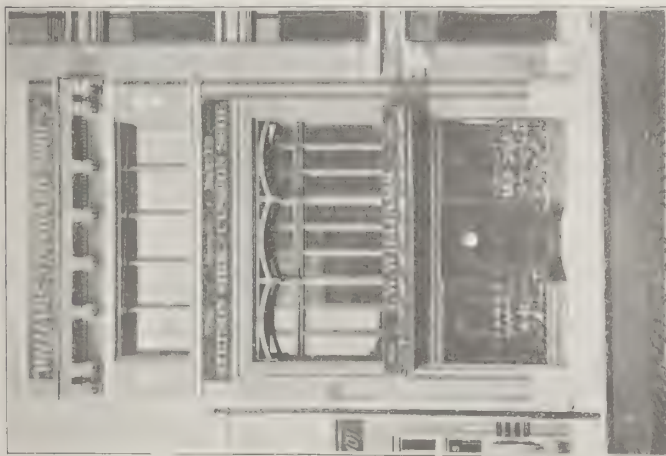
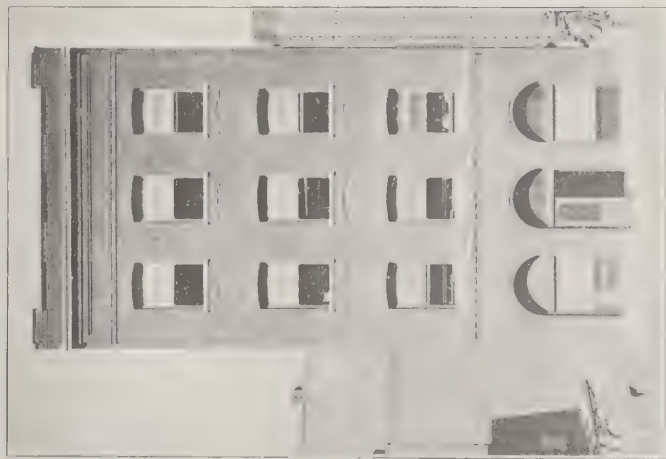
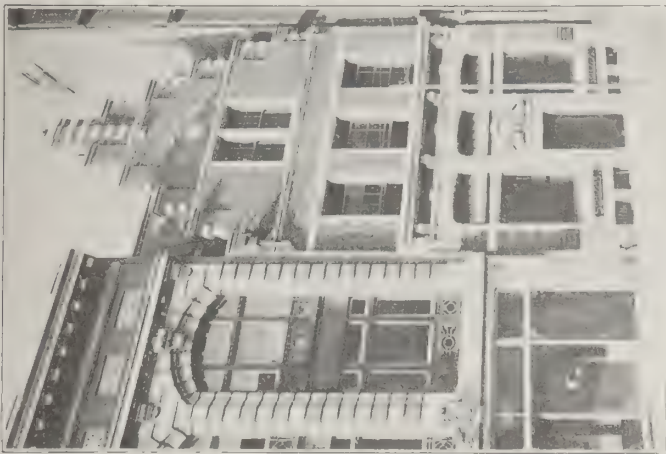
KIRWAN'S HOTEL, Hale & Morse, Architects.



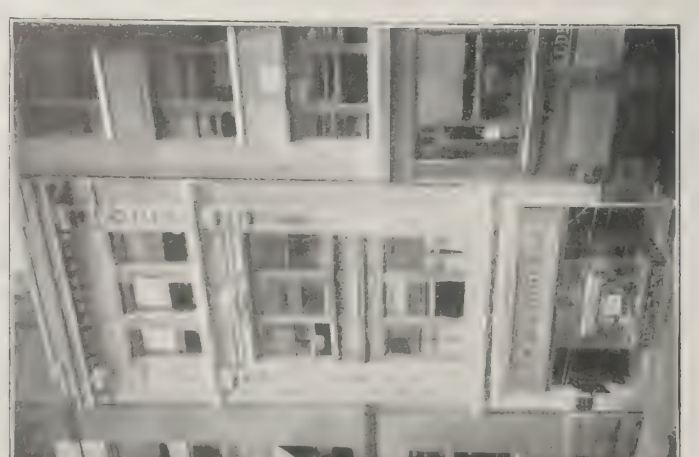
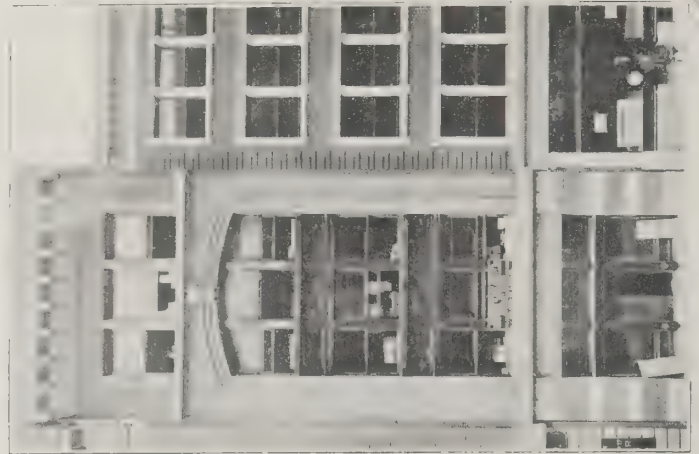
NATIONAL MARINE BANK. E. H. Glidden, Architect.



LANAHAN BUILDING. Simonson & Pietsch, Architects.



A GROUP OF NEW STORE AND LOFT BUILDINGS. Archer & Allen, Architects.



TWO NEW STORE AND LOFT BUILDINGS. Owens & Sisco, Architects.

TWO NEW STORE AND LOFT BUILDINGS. Elliott & Emmart, Architects.



J. APPLETON WILSON, ARCHITECT.



PARKER & THOMAS, ARCHITECTS.



H. S. MAGRUDER, ARCHITECT.



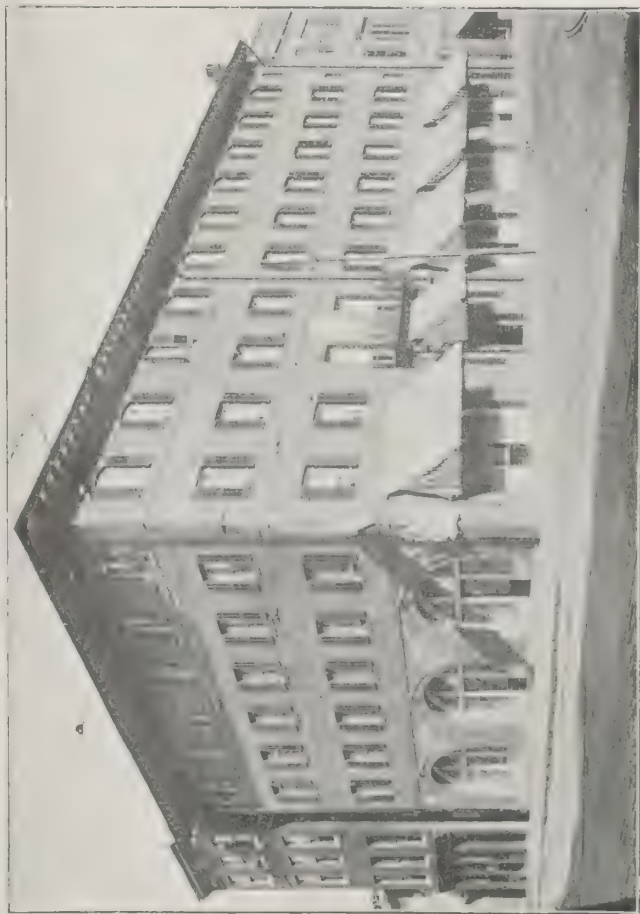
TORMEY & LEACH, ARCHITECTS.



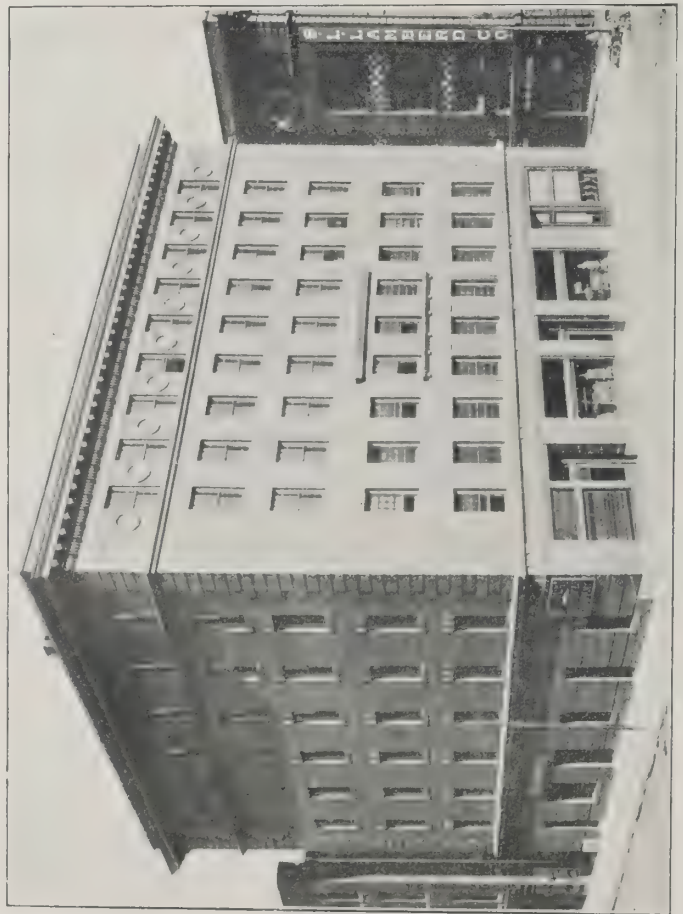
ABELL BUILDING. Delano & Aldrich, Architects.



RIDDLEMOSER BUILDING. Sperry, York & Sawyer, Architects.



HOTEL RALEIGH. Delano & Aldrich, Architects.



BIBB BUILDING. Owens & Sisco, Architects.

given power to acquire, either by private purchase or by condemnation proceedings, whatever property was necessary for the purpose of widening or extending the streets. The Emergency Committee had carefully considered the conditions and had recommended a change in the widths and in the grades of a number of streets throughout the burned area. The Burnt District Commission practically adopted the recommendations presented by this committee. This portion of their work has been practically completed, and there has been added to the former street area within the burnt district more than 348,000 square feet, or about eight acres.

There was a change of grade in nearly all the streets within the burned area, in some instances only slight, but in others a much more radical one; and a delay in establishing these grades meant a delay to all building operations. During the month following the fire a commission to revise the building laws was appointed, and adopted recommendations which were recognized as being absolutely

best in architecture. A beautiful building may be simply a structure that satisfies; its architecture does not appeal to them. Though the general public is so unappreciative, the critic is not. Good criticism promotes a healthful condition, though so few are willing to receive it.

In the haste to rebuild after the fire art weakened and commercialism triumphed, and this unhappy condition became an important governing factor in regulating design and construction. There is no disputing the fact that the materials which best stood the fire test were the products of burnt clay. One would suppose that the success of these materials in withstanding such a severe test would recommend them to a more general use, especially terra cotta for ornamentation. The client appreciates the lesser expense of this material as compared with others and recognizes its ornamental possibilities, yet when he learns that he must wait for six or eight weeks for his work to be executed he objects to the delay and demands that terra cotta be eliminated and



necessary in the reconstruction of the burned area. Until the adoption of these suggestions and the establishment of the proper street grades, the building department refused to issue permits, so that a delay of from two to three months resulted.

When matters were allowed to proceed there came the demands for hurried work. This necessarily meant a hurried and inadequate study of design, which many of the finished buildings show. The less time required to complete one commission the greater the number of commissions it would be possible to complete within a certain period; the greater the number of commissions the greater the revenue. This did not follow in all cases, however, for owing to the great influx of talent the schedule of charges adopted by the American Institute of Architects was not strictly followed; the client demanded cut rates, and the finished building was a bargain. The client paid for it and was happy, but that did not make it good architecture, although it might be better than the building that formerly occupied the site.

The general public does not properly appreciate the



galvanized iron be substituted in its place. Thus once more does commercialism triumph and art suffer.

However, the fire has been a tremendous benefit to the city. This assertion may seem strange in view of the loss that individuals suffered. But the benefit has accrued to the city as a whole in the confidence the citizens have in its future, and in the increased demand for ownership of real estate, with the accompanying enhancement in values. This condition does not exist in the burned area alone, but has extended to the limits of the city and into the surrounding suburbs.

The area of the district over which the fire burned is approximately one hundred and forty acres, and about fourteen hundred buildings were destroyed. About four hundred buildings had been completed by July 1, 1905, with fifty additional ones in course of construction. This has practically been accomplished within one year. The new buildings are superior to the old in appearance, construction and equipment, and have had incorporated into them such improvements as have been developed in other cities in recent years.

Tile and Faience Work in France. I.

BY JEAN SCHOPFER.

IN an article with illustrations reproducing merely the designs, without the coloring of the completed and finished work, it is perhaps impossible to indicate the great variety and possible diversity in color and texture latent in the use of decorative tiles. Yet the fact is beyond dispute that, in an age when color in architecture seemed destined to perish and disappear, tiles brought a brightening and rejuvenating influence into the art of building. No matter what their color, be it pale cream, bright yellow or flaring red, yet it saves us from the terrible monotony of sad-colored stone.

Among the countries which have shown the most progress in experimenting and producing new ideas in the different ways of employing materials of clay, France demands an important position, not alone from her extreme modernity,—so extreme, eccentric and bizarre, in some instances, as to cry aloud for notice,—but she has



CAFÉ RICHE, SHOWING EXTERIOR DECORATION WITH ENAMELED TILES.

also struck a more conservative note that is as properly her own, while the considerable progress of decorative and constructive art that she has realized in this industry is undeniably deserving of careful attention. From the fact that many of her most original and best trained artists have devoted their time to experimenting in various treatments of different materials for many especial and individual purposes, then it may be truly said that France excels; and however notable may appear kindred instances that, as a part of the same movement, have developed in Belgium, Germany, Austria and Italy, it is yet essential for a proper understanding of the field to consult the best works of modern French designers,

It is but a short time, comparatively speaking, since artists first discovered that enameled tiles were susceptible of being applied architecturally in a much greater variety of ways than they had before realized. They were already being used as facings for bathrooms, in public corridors, halls and lavatories, for basements,



BAKER'S SHOP, SHOWING EXTERIOR TREATED WITH ENAMELED TILES.

“subways,” and even occasionally on interior light wells. It was but seldom, however, that they were placed on the outside of the building, and then only in slightly varying tones, used sometimes to enrich a frieze or to add a few notes of color around the framework of a window. And yet what could seem simpler and more inevitable? Here was a material of clay that it was easy to bake and prepare, that keeps its enamel surface perfectly, and consequently is susceptible to all of the numerous aspects that color and drawing place at the command of the designer. And besides all this being, in the process of its manufacture, baked and enameled in the furnace, the material offers great resistance to the action of the air, dust and rain, and the long exposure to dampness that discolor and affect other less well protected materials.

Perhaps the broader beginnings of this movement may be credited to the Exposition of 1899, when it is indisputable that the general public were first given an opportunity of realizing the different possible applications of various forms of architectural ceramics. The Palaces of the Champ de Mars — the Palace of Fine Arts and Palace of Liberal Arts — were remarkable for the almost exclusive use of clay materials. It is true that the clay was united to a framework of iron and was actually employed but to fill up, overlap and enclose, as with a garment, this skeleton of iron and steel; but who will claim that these palaces were not infinitely



APOTHECARY SHOP FRONT, TREATED IN ENAMELED TILES.



DECORATIVE PANEL TREATMENT WITH ENAMELED TILES.



DECORATION IN ENAMELED TILES FOR BATHROOM BY A. CHARPENTIER AND F. AUBERT.



SHOP INTERIOR, SHOWING DECORATIVE TREATMENT WITH ENAMELED TILES.



INTERIOR BAKER'S SHOP, SHOWING TREATMENT WITH ENAMELED TILES.



SHOP FRONT, SHOWING TREATMENT WITH ENAMELED TILES.

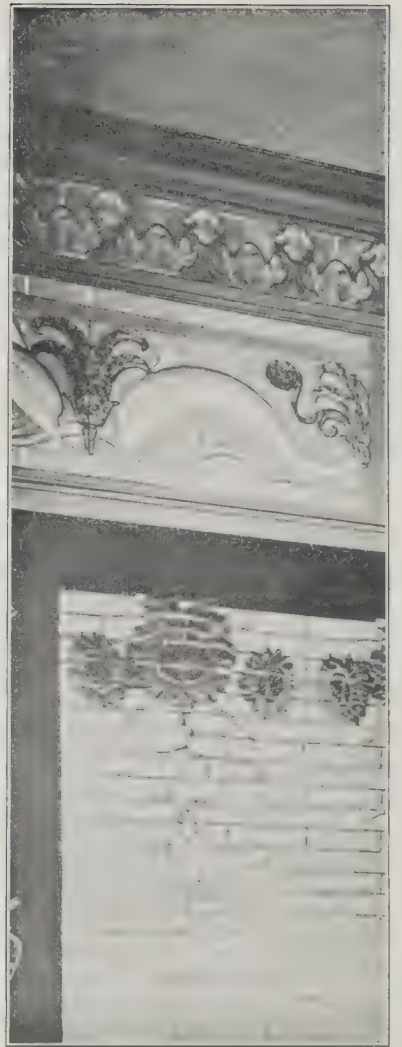
superior architecturally and from the decorative point of view, and as to the quality of the materials employed, to the deplorable buildings — so-called “*de fantaisie*” — that were erected upon the same Champ de Mars in 1900?

At about the time of the Exposition of 1900 there appeared upon one of the principal boulevards of Paris a café whose exterior ornamentation in enameled tiles struck a new note in the decoration of city façades. It was the Café Riche. From the illustration it is possible for us to realize to-day something of the intentions of the architect, M. Ballu, and of the designer of the colored faience mural decoration, M. Forain. Placed on the outside of a popular restaurant, they represented different scenes of Parisian life, all treated with a very clear and happy decorative effect. So at last there was shown on one of the most frequented thoroughfares of Paris a style of decoration pleasant to the eye, very modern, quite new and entirely due to ceramic.

This façade was destroyed, but the effect of the lesson remained, and other show fronts in enamel tiles soon resulted. Sometimes indeed they evidenced too vivid a taste for the fancy of

what is variously called “*L'Art Nouveau*” or “*Modern Style*,” but they were always alert, gay, clear, fresh and clean in color and obtained a real success as a means of advertising, whatever other questions of propriety and taste they may have raised. And now, the fad once started, Paris provides every day a new example of a brilliantly colored and ornamented tile shop front.

It seems possible that enamel tiles shall prove to be the eventual solution to the problem of the discoloration and deterioration of most of our historic building materials when exposed to the contaminated atmosphere of our large cities. They are affected neither by dust nor by damp, and if soiled there surfaces are easily cleaned with the aid of a towel and a little fresh water. As the last few years have brought this material into more gen-



EXAMPLE OF PANEL AND FRIEZE WORK IN TILES.



SHOP INTERIOR, SHOWING DECORATIVE TREATMENT WITH ENAMELED TILES.

eral use it has received more and more careful and intelligent attention from various decorative designers to whom the variety and newness of the problem have appealed, and already enough has been done to prove that it is capable of being treated in such a way as to produce an art that may be both original, new and becomingly adapted to the problem of the shop front and city street façade.

Among the many examples which have been realized in the different sections of Paris there is illustrated the shop of a baker and confectioner, situated in the east end of the city, in a quarter inhabited principally by the working class. Sociologists may be pleased to note the fact that an instance of art so modern and cheerful is thus found in a popular working quarter of the capital. On the exterior, slabs of plain, dead enamel form the base

course. Upon these are placed the brilliantly enameled portion of the upper part of decoration, which represent subjects suggested by the various processes used in connection with the making of bread. The coloring is fresh and clear, making a most pleasant change from the ordinary and monotonously toned conventional shop front.

The interior has also been decorated entirely with enamel tiles. Here certainly no one can question the exceptional desirability of this material. Whereas wood, stone and marble, along with most other materials, present a surface that is porous and therefore impossible to keep thoroughly clean, it must be remembered that on this highly glazed and polished material it is quite impossible for any germ or dirt to obtain a permanent lodgment, and it is only necessary to give some care and attention to the necessary joints



"LES BOULANGERS," BY A. CHARPENTIER.

which is decorated with various paintings, by tiles that are coving and concave in section. As a whole it presents really the most modern, cheerful and prettiest baker's shop that could be imagined, and throughout it all is maintained a note that is most modern in style. The principal decorative motive is formed by the wheat ear, sometimes twisted and conventionally malformed in outline. Whether or not the detail of this decoration

appeals to one, it cannot but be allowed that the *ensemble* is gay, brilliant and absolutely clean; and that it constitutes a real progress beyond the shops next door, typical instances of the shop of bygone days.

This style, somewhat more extreme in treatment, animates another shop front, that of a chemist in the west end of Paris, albeit the coloring is more soberly conceived.

A second baker's shop is shown and is in turn followed



DECORATION IN ENAMELED TILES FOR A BATHROOM BY E. M. SIMAS.



DECORATION IN ENAMELED TILES FOR A BATHROOM BY E. M. SIMAS.

to make the entire interior surface of such a room anti-septic and thoroughly sanitary. Not only this, but the light colors in which this material is susceptible of treatment are cheerful, pleasant and cleanly looking under all conditions of weather, lighting or surroundings.

The floor of this shop is formed by tiles of heavier colors; the walls have large panels of enamel slabs, while the frieze unites both walls and ceiling, the latter of

by two other views of shop interiors, which variously indicate what can be done by the new method of employing enameled tiles for the exterior and interior decoration of shops.

To indicate in what other directions it is possible to employ and use this material, several other illustrations are here included. As instances of architectural decoration in ceramics they are certainly of indisputable value.

Here, for example, is illustrated a very handsome chimney-piece, planned by one of the best Parisian architects, now dead, Paul Sedille, executed in tiles by the aid of terra cotta. All of the decoration has been suggested from the various elements that nature offers us in winter. The family is shown gathered around the fire, and above the spirit of the home watches over it. Another illustration shows the use of this material for walled surface decoration that is of further interest in this discussion of the subject.

In collaboration with M. Aubert, M. Alexandre Charpentier has designed a wall decoration for a bathroom that has been executed in enamel tiles. This work is carried out in a combination of yellows and greens, blues and pinks, that make a color composition at once refreshingly clean and pleasantly warm and light in tone. At the base of the wall appears a conventionalized border of lilies, behind which a stretch of water shimmers off to the frieze of female figures delicately modeled in relief by M. Charpentier, and the whole ends in a blue-toned sky that may be continued to an indefinite height.

This wall treatment has been utilized in a notable modern bathroom designed by E. M. Simas and constructed in the country house of M. Laurens. The bath basin itself is set into the floor of the room, and recessed into a niche around the walls of which this decoration has been employed. In this bath the floor and tub are of mosaic and the walls are paneled to a certain height with sycamore and alder wood panels, occasionally broken by pilasters of glazed tiles supporting the ornamental faience frieze, above which the walls are covered with cream white tiles.

M. Charpentier, by his essay into the field of glazed earthenware made some time ago, and entitled "Les Boulangers," obtained much notice and comment for a work that was in some ways the most remarkable piece of sculpture of that year. This design was executed by M. Emile Muller in enameled tiles and represents a group of three figures engaged in baking and manufacturing "the staff of life." The coloring was both subdued and strong, as the most brilliant of reds and greens were more or less overcast by the grayish blue tone of the glaze that in part neutralized the effect of the whole panel and did something to tone down the real brilliance of the stronger coloring.

These illustrations should evidence the certainty that there is descending upon us an interesting revival entirely due to a judicious and exclusive use of glazed clay materials, and, from the natural further development of this new industry, we may expect no less than a most agreeable change in the aspect of our streets.

"Ennui was born one day of Uniformity," the proverb says, and it certainly seems possible that we should have perished of ennui or spleen had not ceramic come to the rescue and saved us. But it is not only in shop fronts that it proclaims its usefulness, it is preparing a much deeper revolution. Clay is susceptible of more than one transformation; under a new form, stoneware ceramic, or sharp-fire clay, it will give to architecture an admirable substance that has been hitherto unknown. In a following article an opportunity will be given to study it in its already numerous manifestations.

A TEST OF GOOD ART.

THE new art movement, which has reached such large proportions in Europe and has found so many ardent advocates in this country, is in principle a protest against the acceptance of tradition in architecture as a guide or inspiration for modern work. Its advocates are most strenuous non-conformists. That they include among their number some of the most brilliant minds and that some of the most original creative work which we have seen is due to their talents is unquestioned, but at the same time the number of the adherents new art has won in this country is not a large one.

Our architectural expression, as a whole, becomes year by year more academic rather than less, and tends more with each generation to follow what the non-conformists style blind tradition. If the test of any art movement is in its continued acceptance through a series of years, we doubt whether the new movement will ever occupy a serious position. The styles of architecture derived from classic antiquity have held their own now for nearly twenty-five centuries in an almost uninterrupted growth

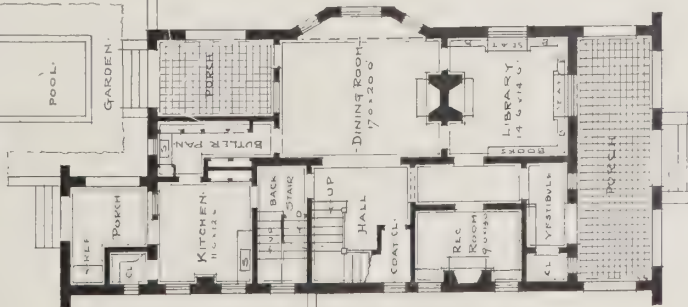


A CHIMNEY-PIECE, EXECUTED IN ENAMELED TILES.
Paul Sedille, Architect.

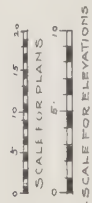
and development. We can find numerous cases where whole streets, if not whole cities, have been built up in styles allied to the Italian Renaissance without degenerating into mere dryness nor branching out into futile eccentricities, but preserving a dignified and monumental *ensemble*. We question very much whether the most ardent advocates of new art would be satisfied to see even one street in any city entirely given up to the odd creations which are classed under this name. So long as the new art is a protest, so long as it is practised only by the talented few, it is interesting and often instructive, but to carry it to its illogical conclusion and apply it to a whole street or city would be to demonstrate how insufficient it is to satisfy as compared with the more studied and rational work, which has had the sanction of centuries.

BRICKBUILDER COMPETITION FOR

A FIREPROOF HOUSE BY HUMUS-



FIRST FLOOR PLAN.

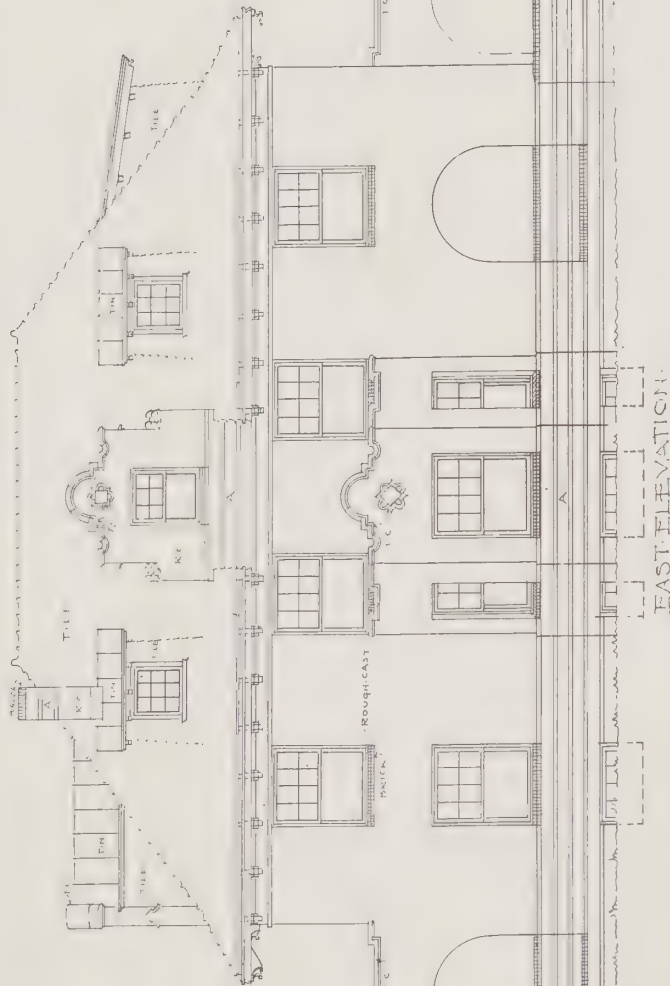


SECOND FLOOR.

NOTE
AT POINTS MARKED A-ON
EAST ELEVATION, THE BANDS
WITH THE ALTERNATE COLOURS
OF RED BRICK AND SLATE GLAZED
WALLS TERRA COTTA BLOCKS

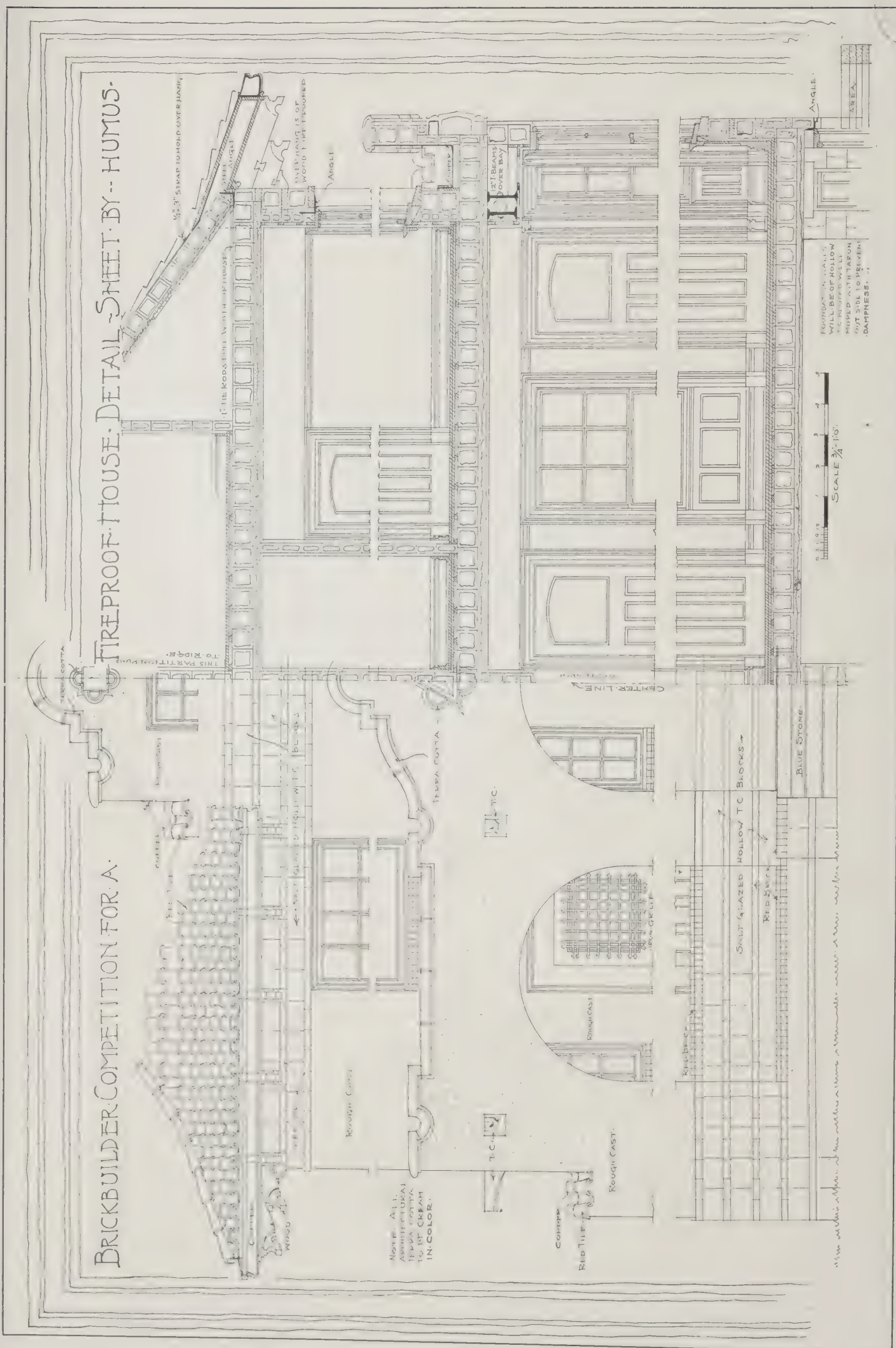


FRONT.



EAST ELEVATION.

FIREPROOF HOUSE COMPETITION. MENTION DESIGN. SUBMITTED BY W. PELL PULIS, BOSTON.



Editorial Comment and Selected Miscellany

CHEAP COTTAGE COMPETITION, LETCH- WORTH, ENGLAND.

FOR some time English philanthropists and architects have been interested in the problem of securing better houses for the poor, not only with improved sanitary conditions, but also of greater architectural merit. Much practical information bearing on this question has been obtained by the competition exhibition at Letchworth of model cheap houses that are to remain permanently in their present location.

Great interest in this novel exhibition has been aroused, not merely among philanthropists, but also among architects and builders, and many prizes are offered to secure varied types and designs of inexpensive but well-equipped dwellings. The primary object of the competition is to determine what can be done in the construction of a laborer's house costing not more than \$750, and a prize of \$500 is offered for the best building. The specifications for this class called for a detached cottage, containing a living room, a scullery (sink room) or kitchen scullery and three bedrooms, provided with two fireplaces, having a cubic content of 2,000 feet, the rooms being not less than 7 feet 6 inches in height.

Prizes are also offered for the best pair of five-room cottages to cost not more than \$1,500; for the best group of three or four cottages, no one cottage to contain more than six rooms, and to be erected for a sum not exceeding \$175 a room; for the best detached cottage or pair of cottages, each containing not more than six rooms and not exceeding \$175 a room; and in each case the estimated cost is to include neither the architect's fee nor the builder's profit.

Other prizes are offered for the best design and specifications for a detached laborer's house costing not more than \$750; a pair of five-room cottages costing not more than \$1,500; a group of three or four cottages, no cottage containing more than six rooms, costing not more than \$175 a room; and for a detached cottage or pair of cottages, each containing not more than six rooms and costing not more than \$175 a room.

An anonymous donor offered a prize of \$500 for the cheapest cottage in the exhibition, the jury of award to exercise discretion as to compatibility of cheapness with soundness of construction and suitability for a rural laborer's family; the Associated Portland Cement Manufacturing, Limited, offered a prize of \$250 for the best cottage built of cement-concrete; Mr. H. G. Elwes, F. R. S., a prize of \$50 for the best design and specifications of a cottage to be constructed entirely of English timber; the Coöperative Small Holdings Society, \$50 for the best model of a small holding; and a prize of \$250 is offered for the best wooden cottage.

Prizes are also offered for the best invention or improvement in building materials and fittings calculated to improve, cheapen or facilitate the erection of cottages.

Sir Walter Lawrence, Mr. Thackeray Turner, Professor W. R. Lethaby, Mr. R. Weir Schultz, Miss Octavia

Hill, Miss Yorke and Professor Sims Woodhead are the judges of the competition.

This competition has caused a most interesting group of model cottages to spring up within the Garden City, a practical demonstration which will be of assistance to all those interested in the better housing of the poor, not only with regard to design, but also in the desirability and expense of various building materials.

Of cottages of the first class, to cost not more than \$750, the two more interesting were designed by Percy Houfton and A. H. Clough, that of the latter estimated to cost but \$675.

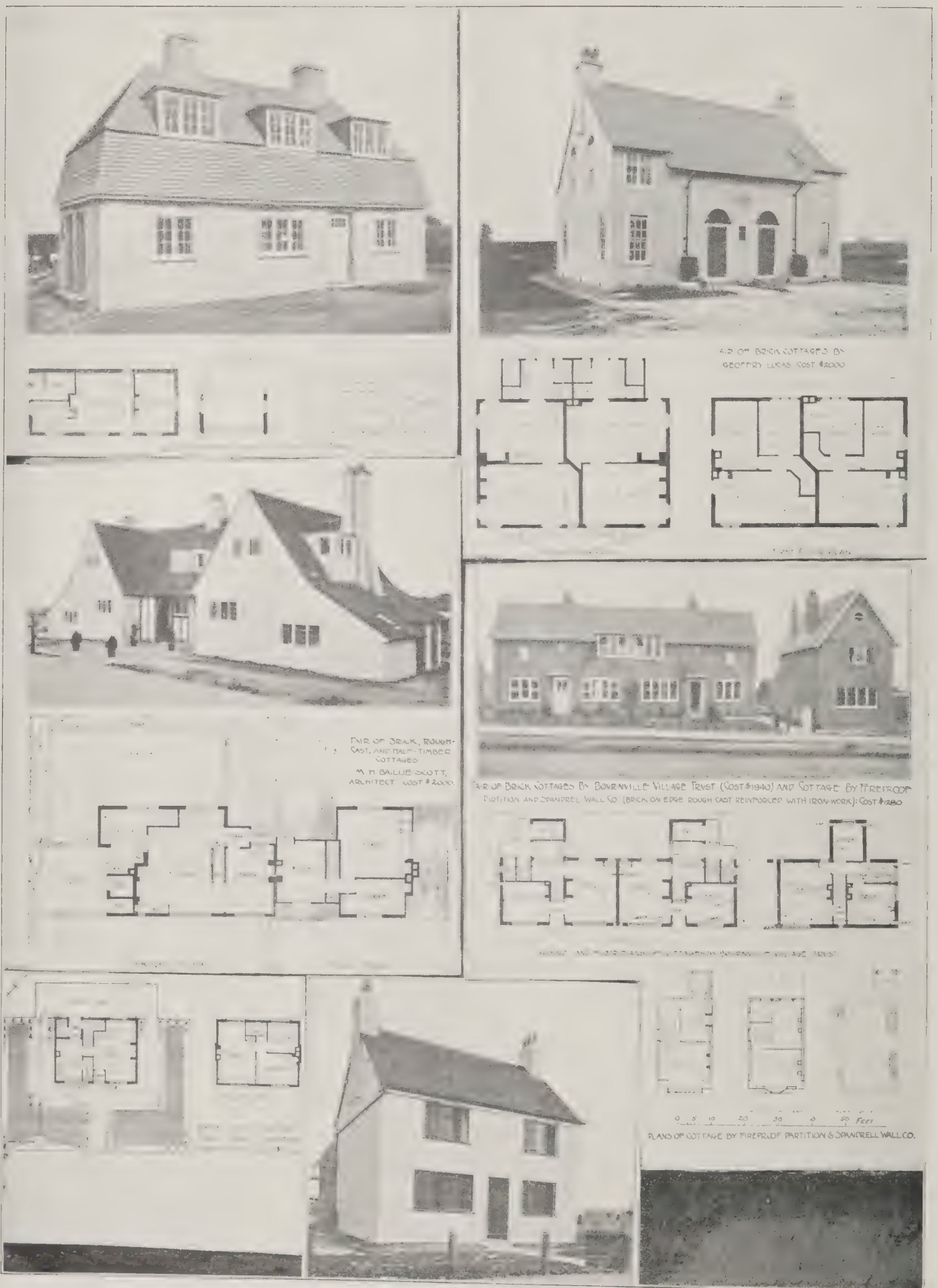
Another building that has attracted much attention is a double cottage, designed by Geoffrey Lucas, and estimated to cost \$2,000. The cost of this cottage includes transportation of materials, contingencies, drainage and other charges, a rate of about 10½ cents per cubic foot. The walls are of 9-inch brick and the roof is tiled; the floors are of timber, with a concrete bed beneath. The instructions called for white Arlesey bricks and sash windows, both difficult to employ in a small building, the height of which is kept low to reduce expense; but it is generally admitted that the architect has overcome this difficulty.

A still more expensive pair of cottages was designed by Baillie Scott. This building is estimated to cost \$2,100, or \$175 a room. The walls are of 9-inch brick, rough-cast, with oak half-timber; the ground floor paved with red bricks, the upper floors boarded; the roof of oak, red tiled; and the foundations are of concrete. The two cottages are so designed that they may be converted into one.

The Bourneville Village Trust has erected a pair of cottages estimated at \$1,940, employing materials and designs that experience in building about six hundred houses at Bourneville, near Birmingham, has proved most successful. The walls are of red brick, 9 inches outside and 4½ inches inside; the floors are 1-inch tongued and grooved boards and 9-inch quarries; the roofs of Broseley tiles; the footings of brickwork 18 inches wide, on solid bottom soil, while Tobin ventilators are placed in every room. The cost of the pair is placed at about 10 cents a cubic foot, or about \$155 a room, while the expense of installing hot-water boilers, tanks, piping and bath with taps, etc., is \$50 per house.

To the right of the Bourneville cottage the Fireproof Partition and Spandrel Wall Company has erected a two-floor cottage, costing \$1,280, about 10½ cents the cubic foot, including drainage and fencing. Brick-on-edge, reinforced with iron and built in cement-mortar, is used for the walls. This construction is thought to be as strong as ordinary 9-inch walls and self-supporting, foundations being required under stanchions only. Protection against damp is obtained by the rough-cast outside, hollow space inside and roofing felt, etc.

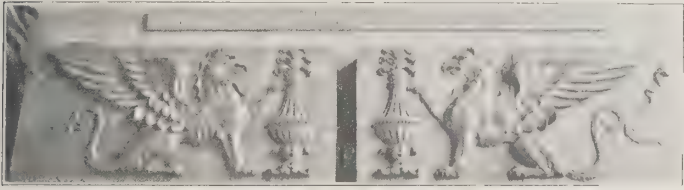
The precise value of this Letchworth exhibition of model cottages is difficult to estimate. Not only will it supply architects with much data for the construction of the cheap house, but it stands as a practical example of what can be done for little money, a service to manufacturers interested in the housing of their employees, as well as to would-be householders of slender means. But the desire of its promoters to obtain a type of cottage to



A GROUP OF CHEAP COTTAGES EXHIBITED IN COMPETITION AT LETCHWORTH, ENGLAND.

cost \$750 inclusive, suitable for the agricultural laborer, has not been fulfilled. Little dependence can be placed on these extremely low estimates of cost. By the conditions of the competition architects' fees and builders' profits, aggregating, perhaps, 15 per cent of the client's outlay, are eliminated. But many competitors seem also to have omitted from their estimates the cost of transporting materials as well as the expense of the many small fixtures that make a house livable. And so when the householder comes to duplicate, in the ordinary course of trade, one of these Letchworth cottages, he must add from 15 to 25 per cent of the estimated cost.

Not only are these estimates of cost most unsatisfactory, but in many instances the designs show a failure to study the function of rooms and the utility of space, valuable room being taken up with passages, large landings

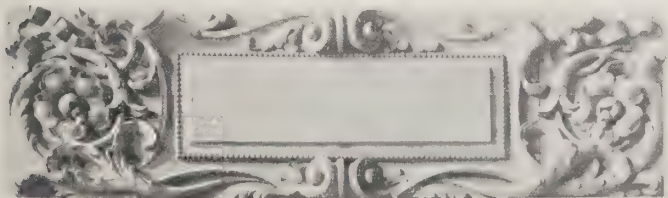


DETAIL BY FISHER & LAWRIE, ARCHITECTS.
Northwestern Terra Cotta Co., Makers.

and nooks, while the relative positions of beds, windows, etc., have not been kept in mind.

Nevertheless, so unique an exhibit will be of great value to those interested by necessity or choice in the "simple life."

THE last BRICKBUILDER competition calling for designs for a fireproof house constructed entirely of terra cotta fireproof material has aroused a good deal of interest among our subscribers, as a result of which we have received many inquiries from various parts of the country. The competition has started thought along new constructive lines, and some interesting results are pretty sure to follow. The ordinary form of terra cotta building block can be adapted for several varieties of construction. These blocks are made four, eight and twelve inches thick, and so afford an opportunity for varying thicknesses of wall and varying bonds, incidentally allowing of considerable variety in the exterior treatment. The texture



DETAIL BY FULLER & PITCHER, ARCHITECTS.
Excelsior Terra Cotta Co., Makers.

of these blocks is almost invariably pleasing, and by a little selection several varying shades can be obtained in the market, so that the possibilities of color treatment are quite large; and when the material is treated with a soft glaze, which increases its cost but slightly, the scope of color treatment is considerably enlarged. Also, a wall constructed of such blocks affords the very best foundation for a treatment of rough-cast plaster or even a facing

of brick, and the hollow spaces in the blocks insure both warmth and dryness in winter and a certain amount of protection against heat in summer. The material itself is practically indestructible and impervious to even the most excessive conflagrations, and its use

offers large opportunities for artistic treatment. We shall be glad at all times to show in THE BRICKBUILDER the results which architects are able to obtain by the employment of this material. We hope the time is at hand when wood as a building material for external use will largely cease to be employed. Its place must be taken by some material which is durable, comparatively inexpensive and of practical as well as artistic value. It is our intention to make a thorough investigation of the different methods in which terra cotta blocks can be used, obtaining comparative costs of other materials, and embodying the



DETAIL BY WIDMANN, WALSH & BOISSELIER,
ARCHITECTS.

Winkle Terra Cotta Co., Makers.



DETAIL BY NEW JERSEY TERRA COTTA CO.

results in a series of articles which will appear during 1906. Constructive terra cotta is undoubtedly destined to be the material which will give the best results in all respects when wood has become so scarce as to be prohibitory.

CONCRETE BLOCKS.

WE have seen in the market within a short time several samples of a composition which is sold as imitation sandstone. It is made of sand and cement in proportions varying from one to three to one to five, mixed with a very slight amount of water and tamped very strongly into wooden or plaster moulds, the blocks being removed from the moulds almost as soon as the mixture is tamped in place and allowed to set with an occasional sprinkling of water. These blocks present a very creditable surface and one which closely resembles some grades of sandstone. Unfortunately they resemble sandstone in more respects than mere appearance. We have yet to see offered in the market a natural sandstone which could be called in any sense a first-class building material. With the exception of one or two quarries which have been opened up in Colorado, all of the sandstones on the market are loosely compacted masses of



BIGELOW SCHOOL, SOUTH BOSTON, MASS.

A. J. Bateman, Architect.
Built of Gray Kittanning Brick.
Fiske & Co., New England Agents.

sand with a very slight siliceous binder, and consequently with a very high absorptive rate. Such stone will cut beautifully, will present a uniform texture and lends itself to all kinds of tooled surfaces, but it simply will not stand when subjected to sharp alternations of freezing and thawing. If this is true of sandstone, the fatal defect is even more pronounced in the so-called cement blocks to which we have alluded. If the cement and sand are mixed with what is a proper amount of water at the start a block can be obtained which is fairly dense and is less likely to be attacked by frost, but it is impossible to economically secure in such a composition a sandstone effect. Sidewalk builders learned long ago that the only form of cement or concrete which would stand the weather was one in which there was but a slight admixture of sand, the surface itself being almost pure cement; and whoever uses the so-called imitation sandstone with the idea that it will stand our weather is sure to pay pretty high for his experience in the long run.

When it comes to a question of standing fire, these manufactured blocks are only a trifle better than the building blocks made of plaster of Paris. They will withstand a moderate heat, so will wood blocks for that matter; but no compound with cement as a binder can be depended upon to resist any great amount of heat. If the aggregate is composed of well burned cinders it will resist a lengthy exposure to a low temperature without cracking, though the surface will be very speedily disintegrated and fall apart. If, on the other hand, the mixture is what is known as stone concrete, a slight amount of excessive heat will crack it all to pieces; and after being exposed to heat, even though the material shows no immediate signs of disintegration, some unknown process goes on within the block as a result of which ultimately it will be cracked and checked through from end to end. This has been demonstrated beyond question by repeated

fires as well as by careful laboratory tests. The fact that in some buildings which have been destroyed by fire the concrete flooring has not absolutely disappeared simply shows that in that particular case not a great deal of heat was manifested. Concrete has its excellent uses; for some purposes it is unsurpassed, but surely for fireproofing it is more than a doubtful experiment.

BUYING BOOKS.

ARCHITECTURAL books are always expensive because the market is necessarily quite restricted. The cost of production is large, and the number of those who would care to produce such work and who have the requisite equipment is quite small. Consequently the cost of even a modest architectural library is quite excessive. No matter how strenuously one may desire progress before precedent or originality before the academy, the fact remains that architecture is essentially one of the retrospective arts, that to be alive and in the procession one must keep up with what other architects are doing in the great cities, and all this means a constantly growing library and increased expense. It also means, however, growth and strength, and the ability of an architect, certainly as far as relates to his intentions, is, after all, measured quite accurately by the extent of his architectural library.

BUILDING OPERATIONS FOR AUGUST.

THE building operations in the various cities of the country, as shown by reports to the *American Contractor*, New York, covering the building permits issued during August as compared

with the corresponding month of last year, fairly surpass the expectations raised by the remarkable record of July. In the aggregate the building operations of this country are now more extensive than at any previous time in its history. Almost universally there has been a gain over last year, and in many instances this is simply astonishing.



A MANUFACTURING BUILDING FOR HEAVY MACHINERY.
LAID UP IN STAR BRAND AKRON CEMENT.



IOWA APARTMENTS, GRAND RAPIDS, MICH.

A. W. Rush & Son, Architects.
Brick furnished by Columbus Brick and Terra Cotta Co.
F. H. McDonald, Agent.



COLUMN AND CAP FOR PERGOLA.

H. E. Reeve, Architect.

Brick, Terra Cotta and Tile Co., Makers.

The permits issued in Greater New York amounted to \$25,296,674, being almost exactly double those of August, 1904. In Manhattan the gain was 134 per cent; in Brooklyn, 26 per cent; and in the Bronx, 258 per cent. Operations in Chicago are second only to those of the metropolis, amounting to \$6,401,150, a gain of 80 per cent. Philadelphia follows Chicago with permits amounting to \$2,876,200. St.

Louis reports \$1,855,980, a gain of 25 per cent. This is especially gratifying, showing as it does that the large building operations there during the past two years were not carried on at the expense of the future, as was freely predicted. That the building prosperity is as wide as the country is shown from the following list of permits, with the percentage of gain: Buffalo, \$885,055, 44; Dallas, \$274,825, 77; Denver, \$490,350, 25; Detroit, \$945,000, 30; Duluth, \$192,449, 79; Harrisburg, Pa., \$406,525, 250; Hartford, \$343,810, 223; Indianapolis, \$742,849, 131; Louisville, \$863,373, 197; New Orleans, \$1,013,906, 250; Newark, N. J., \$759,749, 57; Scranton, Pa., \$286,401, 14; Salt Lake City, \$281,934, 72; Winnipeg, Man., \$1,224,500, 28. In view of the fact that the yellow fever has been raging in New Orleans, the showing made by that city is very remarkable. The losses are comparatively small and, in almost all instances, seem chargeable to local conditions. Baltimore is the only large city which shows a loss, amounting to only 14 per cent, and due to the rebuilding operations of last season.

THE STEEL MARKET.

THE steel production in this country is considered a pretty good index of national prosperity. Never before in the history of the Monongahela valley have there been so many mills, furnaces and shops under process of construction. Twenty-five million dollars is being expended in plants in that district. Nor is this entirely the work of the United States Steel Corporation. That world-famous combine has not seemed to materially alter the number of independent plants in operation, but rather to have increased the number of mills and to have

greatly enlarged the capacity for steel production.

IN GENERAL.

Otto H. Lang, formerly architect and structural engineer of the Texas and Pacific Railway, and Frank O. Witchell, formerly of Sanguinet & Staats, architects, have formed a copartnership for the practice of architecture under the firm name of Lang & Witchell. Offices, Wilson Building, Dallas, Texas. Manufacturers' catalogues and samples desired.

The Hydraulic Press Brick Company of St. Louis will supply the gray brick to be used in the new Baptist Sanitarium at Dallas, Texas, and the mottled old gold brick for the new courthouse at Tuskegee, Ala. Both of these buildings will require large quantities of brick.

F. H. Chapin, formerly representative of the Hydraulic-Press Brick Company at Minneapolis, Minn., has been elected assistant secretary and sales manager of the company.

Bennett's roofing tiles will be used on the New National Park Seminary at Forrest Glen, Md.; water tower at Roland Park, Md.; telephone station, Navy Yard, Washington, and a new house at Spring Lake, N. J.

The Celadon Roofing Tile Company has purchased the plant of the Imperial Clay Company of Cleveland, Ohio, whose factory is located at New Lexington, Ohio. The necessity of this move was owing to their inability to take care of a rapidly growing business with the present capacity of the Alfred plant, and the imperative demand for an immediate increased output. By acquiring the New Lexington plant they have trebled their capacity

and secured a product the character of which is exactly similar to their own. In addition to the roofing tile, the New Lexington plant will continue the manufacture of its high-grade face brick. The names of the officers of the company guarantee that the business will be conducted along straightforward and progressive lines. They are: Wm. R. Clarke, President; Wm. R. Worley, Vice-President and General Manager; A. W. Brown, Treas-

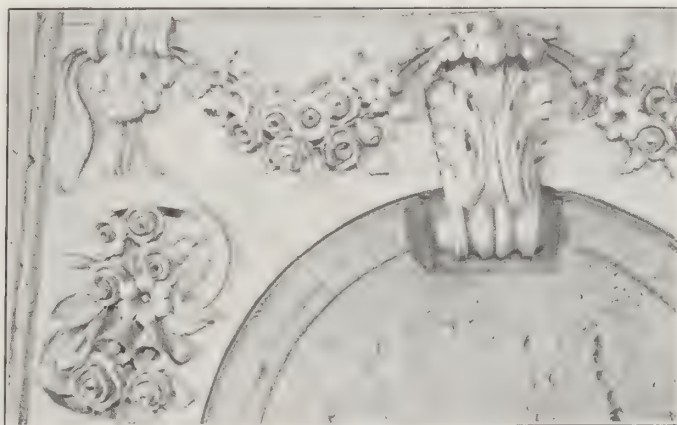


DETAIL BY GEORGE R. MANN, ARCHITECT.

St. Louis Terra Cotta Co., Makers.



DETAIL BY NEW YORK ARCHITECTURAL TERRA COTTA CO.

DETAIL BY S. S. GODLEY, ARCHITECT.
Indianapolis Terra Cotta Co., Makers.

urer; A. B. Clarke, Secretary. The sales office for roofing tile will be at 156 Fifth Avenue, New York City. The sales office for brick, as well as the operating and financial conduct of the business, at 716 Cuyahoga Building, Cleveland, Ohio. Branch sales offices at 723 Bessemer Building, Pittsburg, Pa., and 1001 Marquette Building, Chicago, Ill.



DETAIL BY A. A. RITCHER, ARCHITECT.
Conkling-Armstrong Terra Cotta Co., Makers.

The structural part of the building is composed largely of hollow tile reinforced by a special steel bar. There are no large steel girders or beams in the structure. The outer walls are to be of hollow tile with pebble-dashed exterior finish. The use of hollow-tile building blocks and fireproofing in this whole-

sale manner marks a distinct departure in building methods.

Another noteworthy feature of this hotel will be the fact that every room will have a bath and a bay window. The hotel structure rests on thirteen hundred piles which were driven into the sand to a depth of 20 feet, considerably below the water line, by jettying; that is to say, holes were bored for the piles by powerful streams of water. No excavating had to be done at all. Engineers say, however, that the bath of salt water which the wood piles obtained in this jettying process will make them virtually everlasting when strongly surrounded by the abutting sand below the level of low water.

AN INTERESTING NEW HOTEL AT ATLANTIC CITY, PRICE & McLANAHAN, ARCHITECTS.

ATLANTIC CITY has never been famous as a place where fire would have trouble in gaining quick and disastrous headway. As a result of the lessons taught by the big blaze of three years ago, however, a building is now going up there which will be not only absolutely fireproof, but which embodies many novel structural features. This is to immediately adjoin the present Marlborough Hotel on the Board-walk.



HOUSE AT ST. LOUIS, MO.
Roofed with American S Tile.
Cincinnati Roofing Tile and Terra Cotta Co., Makers.

The new building, which is being put up by the National Fireproofing Company, will make a new record for quick construction. On June 17 the big block of ground on which this building is being reared was absolutely vacant. On November 1 the completed structure, containing two hundred and fifty rooms, and rising to a height of six floors throughout and to nine floors in a central dome, will be turned over to its owners ready for decoration and furnishing. Completely equipped, the hotel will open its doors on February 1.

Stretching 425 feet back of the Board-walk, this new building varies from 50 to 125 feet in width at different points. One of its features will be a great sun parlor extending around the front part of the building on the second floor. This sun parlor will have an outlook up and down the Board-walk. It will be 25 feet wide and will contain six fireplaces of unique design, thus making the parlor particularly attractive in winter. There will also be a sun parlor stretching entirely along one side of the building. In fact, the entire second floor will be enclosed only with glass on one side.

NEW BOOK.

CEMENTS, LIMES AND PLASTERS, THEIR MATERIALS, MANUFACTURE AND PROPERTIES. By Edwin C. Eckel, C. E., Assistant Geologist, U. S. Geological Survey. 8vo, xxxiv + 710 pages, 165 figures, 254 tables. Cloth, \$6.00 net. New York: John Wiley & Sons.

For the convenience of those who wish to make further studies of such subjects, very complete reference lists have been placed in almost every chapter of this volume. These lists necessarily contain the names of some papers and articles published in European periodicals or transactions, but most of the titles cited will be found to be from readily accessible American journals. Stress has been laid, in the discussion of manufacturing methods, on the general chemical and physical principles which underlie these methods rather on the details, which differ at every plant and may change with every year.

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OCTOBER 1905

No. 10

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A PALACE IN ERIJA, SPAIN.

THE BRICKBUILDER

VOL. 14 No. 10 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY OCTOBER 1905

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ECCLESIASTICAL ARCHITECTURE.

IN the discussion as to the influence upon church architecture of the somewhat novel conditions of modern times there is naturally great variety of opinion caused by an equal variety of individual or of denominational sentiment. The stronger the tradition of the ritual and the more established the forms of worship, the more nearly will the architecture resemble precedent and be imitative of tradition both in the plan and in the expression of the exterior. Association with the past is not merely confined to religious observance and to heredity of belief and of aspiration, but must of necessity appear in the material expression of the spiritual desire. And as naturally as a plant grows does the Church express itself to-day through the same fundamental means that it has in the past. Dignity of form and space, amplitude of protection, beauty inherent to the highest imaginative conceptions belong preëminently to the Church, and it matters little whether the style be Classic or Gothic if it has these elements of nobility. Propinquity alone causes local change of expression. It was inevitable that the Church in Italy should be affected by the power of Classic art, as it was equally inevitable that in lands without a Classic environment the art of the Gothic should develop from structural factors alone. But in every case where buildings have worthily enshrined religion the noblest and simplest of construction has alone seemed adequate and permanent, and mere utility has been manifestly inexpressive of the desire of man to worship. This is equally true of all religions, Pagan, Buddhist, Mohammedan and Christian. The temple did not live by the mere bread of utilitarian structure alone, but that structure was ennobled in form, in material and in detail.

Corresponding conditions create corresponding expression, at least in all essentials, and religions, which are based upon the noblest aspirations of man, long ago discovered the material means of expressing man's aspirations, and will scarcely depart from them.

Unfortunately a very large percentage of ecclesiastical buildings in America have been designed by men who no more deserved the name of architects than they did of archangels, men who are known by their work, which is crude, malproportioned, without evidence of knowledge of the rudimentary forms of either construction or of ornament. There is a sincere and undoubtedly just complaint made that many of these men have not even business probity. In architecture as in no other profession does the malpractitioner injure the good name of the profession. In law and in medicine, in music and in literature, and in painting and sculpture the work of the incompetent and of the unprincipled passes and leaves but little mark. Dead men tell no tales, but a building erected by an architect stands for years, conspicuous, seen perforce of its existence, either a thing of beauty, of delight, glorified by dawn and by the blaze of noonday, or ugly, sordid, mean, flaunting its poverty of thought; or, worse still, monstrous, an oppression, a permanent disgrace.

The amount necessary to its erection only aggravates the enormity of its offence. It has been asked why the architects themselves do not attempt to protect the clients from the charlatans of their profession. They do. The American Institute of Architects is established for that purpose. It requires that its members shall either have graduated from an accredited school of architecture, or that they shall pass an examination which is sufficient to prove their capacity, that they shall not be associated in any way with manufacture of materials or objects which are used in buildings or in the buying or selling of the same, and naturally that their fees from their clients shall be their only emoluments from the practice of their profession.

There is a need of better church architecture throughout the country, and the lack of it at present is certainly not due to the lack of men of talent, for there are ecclesiastical buildings occasionally erected which give evidence of the skill and ability of the architects. The difficulty must therefore lie in the judicious choice of the architects by the clergy; and it is through the application by the clergy of a similar discrimination to that which they exercise upon other problems, that the best men in the architectural profession may be employed to erect churches which shall be worthy to enshrine religious observances.

Ecclesiastical Architecture.

THE CATHOLIC CHURCH.

PAPER II.

BY REV. JAMES J. FLOOD.

IN this discussion of ways and means the main point seems to be concerned with the style of church which the taste and the necessities of the average congregation will demand in the new era that has just opened. One may theorize to any extent on the question, but the practical thing is to examine with care what the clergy and the people and the architects have been doing in the past, and then to discover what new ideals have entered into their lives, and finally to study the new conditions in which all find themselves at the commencement of the twentieth century. It is upon these lines that I shall endeavor to contribute something worth while to the discussion. It is a good thing that the subject of church building should be taken up in this fashion, for we all need to know more about it than we do, both on the practical and the theoretical side. The architect needs to know the ideals and needs and wishes of his patrons, and the clergy should know enough of architects to be able to pick out one with conscience and real skill as well as reputation. So far as I have observed the architect with a reputation, not for science or success, but for audacious push, has almost monopolized ecclesiastical architecture; and when his deficiencies were discovered some obscure incompetent with the same amount of brass in his make-up took his place. The exceptions to this general statement are quite numerous, and as it is only a matter of my experience it need not be taken too seriously.

The first thing to consider, in the effort to throw some light on the future, is the work that has been done in church building for the past fifty years. The earliest effort of course was to find space for the people to assemble for worship, and the churches of the first days were mostly remarkable for that qualification. We may pass them by. They did what was required of them, and many of them exist yet, pleasant memorials of the beautiful faith of the past. When people had more money and more leisure they built more elaborately, and from the close of the Civil War until the present moment a large number of characteristic churches have been built at great expense and with some success architecturally. The strongest features in their externals are the high walls and the steeples. There is not much variety in the style of the first twenty years, which is regularly some modification of Gothic. More variety and freedom appear later on. The best churches were built of stone, the second best of brick, and all the rest of wood; but their common feature was the lofty wall and the steeple or tower. The conclusion is irresistible that the common idea of the church was then connected with the idea of mass. This statement is borne out by an examination of the more expensive churches. The more money the priest and people had the more solid material they put into their buildings, without regard to the particular need for a great quantity. I have seen churches with towers containing enough brick to build a respectable church for the congregation, and with enough unnecessary brick in the walls to build a second church.

It may therefore be taken for granted that the churches of the future will be built generally in a similar fashion, with such modifications as the new circumstances require; and that the Gothic, the Romanesque and even the Byzantine will be the prevailing styles, because of their adaptability in carrying out the idea of massiveness. In London they are just bringing to completion the new Westminster cathedral, a remarkable and handsome building of the Byzantine style; and this adoption of the Eastern style will be sure to have a wide and overwhelming influence upon the clergy and the people all over the world. Moreover, the Catholic priests and people of America are doing more traveling in Europe than ever before, and are bringing back ideas and some ideals from Europe and the East. Some results of this are seen in the building of a cathedral in Montreal on the model of St. Peter's in Rome; of churches in various towns on the model of the church at Lourdes; together with many imitations of the better known shrines of Europe. Even the poorest Catholic churches make the attempt to reach the massive, and to secure high walls and a tower. The low-walled churches are very few indeed, and there is no reason to expect that they will ever be as popular with Catholics as they have deservedly been with the Protestants. I may conclude this part of my article with the remark that in the future, as in the past, Catholic churches will be massive, and will adopt that style of architecture which handles the massive with ease and distinction. And of course decoration will be on the same scale, in the shape of rich colors and large windows in the Munich and perhaps the English coloring.

The conditions of church building are very much changed however, and the social and financial conditions, not to say the intellectual, of Catholics have improved. It will be necessary therefore to glance at these changed conditions in order to understand how they will modify the last statement in the paragraph above. The general improvement in the Catholic body, more money, more leisure, more culture, means that there will be considerable variety, far more elegance, and better taste shown in the churches. This statement will find illustration at any moment in the churches which have just been completed all over the land. There is no need to dwell upon this point further. The other conditions to which I have alluded may be looked upon as limiting the situation. First of all we have the changed conditions of life in the city and the country. Neither is what it was thirty years ago. Then the people lived over a broader area, scattered through villages, towns and small cities, each of which had a lively, independent life of its own; and the few great cities were only country cities of larger growth, where air space and land space were plentiful, and prices were fairly reasonable. As we know, all that has been changed, for the worse perhaps, and the changes are still going on. The population is being centralized. The great cities draw all things to themselves, prices are high, land is impossibly dear, air space is dear, and land space has disappeared. What remains in the country passes through a similar process. One town absorbs all its neighbors by securing their trade. It would seem that the smaller towns and villages must die out. They have already lost their business, the trolley having carried it to the greater town.

The consequences in such a city as New York, which is of course a case by itself, are very marked. In the first place land is so high in price, and so difficult to secure in the needed situations, that the first debt incurred in the erection of a church terrifies the priest and his congregation. The limits of a parish are fixed, and the church must be convenient to the boundaries. The space from which the ground is to be selected is therefore rather limited. The corners of streets are the desirable places for churches, but the prices or some other obstacle force the selection of a site in the middle of the block. The lot on which the church is to be built is rarely more than one hundred feet in width. On either side the walls of rectory and school close in upon the church structure; or, as is sometimes the case, the walls of secular buildings, the rectory and school happening to be on the next street. The architectural opportunity is thus destroyed, because to such a church there can be nothing but the façade and interior. It would be manifestly ridiculous to erect in such a place a Gothic, Romanesque or Byzantine monument, although in a few cases the thing has been done. It is in a problem of this kind that both priest and architect forget the rules of art and common sense sometimes. What is needed in a church so situated is simply the fine façade and beautiful interior, planned according to the requirements. Towers and steeples are unnecessary expense, and add nothing to the general effect because they cannot be seen. Even where the church stands on a corner or fronting a public square the conditions will not permit of the ordinary style of church. A good illustration is afforded in the fate that overtook the pretty church in which Rev. Mr. Parkhurst officiates on Madison Square in New York City. It is a simple Gothic edifice with a graceful tower and spire. Some one built a sky-scraper beside it and made it look like a child's toy from any point of view. As lofty buildings are certain to be the rule in all the populous cities of this century, one may see that nothing less than an entire block would suffice in order to secure for a handsome church the proper perspective. Closed in on all sides and dominated by the taller buildings, the ordinary church of the past is lost to sight. This fact has so impressed some architects that they are suggesting the use of the upper stories in the sky-scrapers for church purposes, closing the great building with a regularly formed church, to which elevators will carry the congregation. There is nothing absurd in this suggestion.

The point I wish to make is this: with the weight of population in the great cities and large towns, and the consequent change in conditions, the architect must suggest church buildings suited to the new circumstances. I have not stated all the conditions, because it would not be possible within the limits of this article. Let me mention the more obvious. The population of a city parish is usually large. While New York is always to be considered exceptional, yet if we take its conditions for a working example a fair idea can be got of what will be the rule in all large towns. There are from five to seven public services held in our city churches every Sunday morning, and at each Mass the church is crowded or comfortably full. Within the space of an hour the congregation must enter the church, be seated, go through the services and leave the church to make way for the

next gathering. From a quarter to six until nearly one o'clock, therefore, the church is in active service. During the Mass great numbers of people go to Holy Communion. From the altar or the pulpit the priest makes the parish announcements, reads a portion of the Gospel and preaches a very short sermon. From these details the trained and experienced architect will draw his conclusions rapidly. First of all the means of entrance and exit must be commodious and speedy; therefore wide doors and capacious vestibule and aisles. The people go to communion by hundreds; therefore easy approach to the sanctuary rail and easy use of the space before the sanctuary. The parish announcements and the sermon must be heard; therefore good acoustics and proper place for the pulpit, or elevation for the altar platform. From three to ten thousand people attend during the entire morning; therefore light and ventilation of the greatest efficiency. There are innumerable difficulties connected with all these points, and some of them are too easily overlooked.

It is easy to see how large must be the modification in the general idea mentioned in the first part of this article, that of the massive. As far as the exterior of the city church is concerned the idea of the massive altogether disappears. Its place, however, will be taken by large outlines in the façade and a lofty interior, for the church builders are certain to spend on an imposing façade and beautiful decoration what may be saved by dispensing with domes and towers. In the country districts the general ideas will prevail, modified by the lack of means, when the greater part of the population is in the towns. The next question which offers itself to the architect in this matter of modification is the offence likely to be given to tradition by a radical departure from the old fashions. I think there should not be any breaking with the ancient standards, and there will not be, for the reason that the change will never be popular. Modification to suit new circumstances need not be destruction. I read somewhere lately from an experienced architect a plea for the new architecture suited to the new conditions which have been described above. He advocated radical changes in the direction of the new needs, such as would produce a new form of church architecture. In my opinion he is making a mistake as far as Catholics are concerned.

With Catholics the traditional, both in doctrine and in rubrics, has a sanctity beyond the comprehension of their Protestant brethren. It is instinctive as well as formal. Even where we lay an old custom aside for a new and better one, this is done with regret and with tender remembrance; and if possible the old custom is worked into or in with the new. Thus in the use of lights, the invention of the incandescent light, while sanctioned for illuminating purposes and for ornament, by the authorities, has not been allowed to usurp the beautiful wax candle of the rubrics, though its flame be so much more brilliant and useful. In the same way the cruciform church, while a purely conventional idea, appeals so strongly to the Catholic feeling, seems so fitting in a temple erected to Christ, that it must find a place among buildings to the end of time; and even where the exterior will be simple oblong the interior will often take that loved resemblance to the cross, as may be seen in

many churches. These examples will serve to warn the architect against too hasty and radical departure from tradition. In fact that architect will be most successful who can do what has been done from the beginning, blend the past with the present. A good example of this blending seems to be the new London cathedral, in which a clever architect has boldly transferred to London the Byzantine church of Sancta Sophia in Constantinople, with modifications to suit the new country and a different people.

Taking the strength of tradition amongst us, and reading in the church buildings of the past the direction of ecclesiastical and popular taste, it will not be difficult to forecast the general style of church that will be built during this century. In the country and the city the Catholic church will still bear a proper kinship with the traditional forms, with the idea of the massive fully suggested as far as circumstances will permit; in the country traditionalism will be stronger than in the city, because the space demanded by the noble lines of traditional architecture is plentiful; in the city the shifts, to which lack of space will reduce church builders, will always have the traditional in view. The exterior ornamentation will disappear from city churches except in the façade, and therefore the interior will be more highly ornamented than common. More and more will side windows tend to disappear and the lighting come from above, with better results in many ways.

However, it must not be inferred from this devotion to tradition that there need be and will be no varying of forms and no innovations. If, as some believe, we are to have before long a new and more beautiful architecture, growing out of the old, there must be a break from tradition at some point, and it might as well come now as later, if we are prepared for it. The church building needs only to have the dignity of God's temple about it, the mystic shadows of the eternal life suggested in it, to be worthy of the name, no matter what the form. Certainly this dignity is not imprisoned in the Gothic, the Romanesque, or any other consecrated form, so as to exclude the forms that are yet to come from the fertile minds of devoted architects. There is no reason why the styles of architecture called of the French or Italian Renaissance should not be impressed into the service of the church, if architects find them reverent in expression and suitable for church purposes.

There will be no opposition on the part of the clergy or the people to prudent innovation. Pillars may be done away with for the sake of a clear view of the sanctuary; it is not necessary to hold to the ancient form of pew, which itself is an innovation; almost anything may be done in the way of change that will leave intact the main features of the church, namely, its sanctuary, nave and vestibule. The cry made about pillars obstructing the view is of little importance, except with regard to such churches as the Montreal cathedral; for as a rule the pillars are too few and too small to obstruct the view for more than fifty persons in a crowded congregation. The use of iron frames will do away with pillars, and many churches have already taken advantage of the iron and steel supports to get rid of them.

In concluding this rather imperfect view of an important matter I may say that the conscientious architect is

the man who will have nearly all to say in the coming century as to the form and character of the new churches that Catholics will build. Even where he may not make the choice of style and material, it will be his opportunity to adapt the chosen style to present needs and conditions. It is easy to see how much direct influence he will have at important moments. He may dissuade or persuade for the better. The clergy do not wish to make blunders of any kind in building a church and will pay to avoid them, but they must often be shown the precise character of the blunder which they are making before they can be persuaded to adopt the right method. The competent and honest architects ought to be numerous by this time and able to handle church problems skillfully. It would seem that they have yet to acquaint themselves with the peculiar conditions of the Catholic body in order to render that body effective service. If I have done any service to that end in this paper I shall be pleased. There can be no doubt that the field is large, profitable for the most part and artistically satisfactory to competent architects. The drawbacks are indeed numerous, but not more so than with the various Christian bodies in this country. Catholics spend a great deal of money on their ecclesiastical buildings and are fond of artistic effects in style and decoration. During the next generation they will be very active in this department, and ambitious architects of the right caliber may reach present fortune and enduring fame by working earnestly and conscientiously in the Catholic field.

THE CATHOLIC CHURCH.

PAPER III.

BY REV. M. J. LAVELLE.

THERE are of course many and most interesting questions connected with the building of churches, but the two which strike me most forcibly as worthy of discussion in the present symposium are the questions of expense and of style. With regard to the expense of building, its importance cannot be gainsaid, since one cannot travel farther than his money and his strength may carry him. The hardest limitation that the conscientious priest and his architect will meet with is that of expense. This question has a direct and intimate relation with the question of style. These are two very practical matters. What style of church should I build? the priest asks himself; and the next question is: what will my means permit me to build? In this article I shall confine myself, therefore, to a discussion of these two points. It seems to me, after an experience of over twenty years, that an honest and conscientious study of these two points, expense and style, in their mutual relation, would have saved much blundering in the past, as the same study will save floundering in the future.

To the architect I would say over and over again, with all the emphasis and earnestness at my command, handle this question of expense with thoroughness and delicacy and skill. There is just one conviction among the clergy who have had experience and among the clergy who have had none, with regard to architects: that you cannot be too much on your guard against either the folly or the greed of architects. Plain talking will do no

harm in this matter to any but the sinners. When the inexperienced priest goes into the work of building a church his advisers preface their advice with a warning: look out for your architect. Their warning is illustrated by the visible signs of the incompetency or the madness or the greed of architects. I do not discuss how well founded these charges may be; I am only showing the actual feeling among the clergy. They are a trustful set of men, and like all men of that disposition they are likely to be preyed upon by the impostors. But they are rarely imposed upon twice in the same business.

Each pastor knows in general what expense his parish can stand in building a church. That pastor and that parish are responsible for the debts contracted. The diocese and its bishop do not take up the responsibility, although they share in it to the extent of approving the plans of construction, and their moral force may be employed to aid the parish in paying its debts. The business-like architect should make sure that the estimated expense is one that the parish can carry. That is the first step for him. It is purely a matter of business. His next business is to make certain that his plans will keep well within that estimate. It is hard to understand the mania which belongs to some architects of supposed reputation for doubling the first estimate. As a rule the builders of churches are liberal in their ideas and are much inclined to exhaust the treasury for the sake of securing a handsome church. It would seem that this very willingness excites the cupidity of the greedy, and in the end the clergy are led into a very quagmire of debt. It may be a hard saying, yet it is undoubtedly true, that very few of the clergy have a good word for architects in general. This feeling is the natural result of years of distress, brought about by incompetent or venal architects. It now remains with the honest and competent architects, deeply interested as they must be in the progress of architecture, to remove speedily the very nasty impression left upon the clergy; and the very first move in that direction, the most profitable and thorough, will be in this matter of the expense. Let the estimated expense be rigidly adhered to from the beginning. Let there be perfect candor on both sides from the inception of the work. If a church is to cost fifty thousand dollars, complete, let the architect see that he makes no blunder in his plans which will raise the cost one dollar beyond. I think this can be done. There is a general feeling that it must be done, and that architects can be found able to do it. Such architects will easily command the patronage of the clergy, who are more than wearied of the architects with personal interests in quarries and brick yards and terra cotta industries, with partnerships in building firms and acquainted with all the dishonest arts of taxing every industry that has to do with the building of churches and other ecclesiastical buildings. These things are known to the experienced; in time they become the common property of the church builders, and the guilty receive their punishment in the scorn and neglect of their fleeced patrons. This is a subject upon which one cannot write too strongly and which should receive proper attention from architects themselves. The legal fraternity have adopted summary methods by which their unworthy members may be disciplined or actually driven

out; why should not architects of standing protect themselves and their art from the impostors and thieves who ravage under the cloak of respectability?

The second point of my discussion is concerned with the style of church which is to become popular in the twentieth century. There has been considerable discussion on this matter for many years among the clergy, and the virtues of the ancient forms have been highly extolled. Certainly nothing need be said against them, and if the church builders have preferences for the ancient forms of architectural beauty, no one will impugn their taste. Gothic in all varieties, the almost forgotten Greek and the ornate Byzantine, Romanesque, Renaissance, Mo-resque even, early English and late French, there is no reason why we should not have them all. However, there exists a pretty general feeling that with due respect to tradition, the new century and the new continent and the new ideas should generate, or better develop, an architecture peculiar to the people and the times. Of course such an architecture would grow out of the ancient forms, and find its paternity in the glorious past. We have new conditions in America and new customs. For example, we want our churches well heated, well ventilated and well lighted; and we want our people comfortably seated during divine service, and within sight and hearing of the preacher; and we want all the arts that provide these comforts and needs properly represented in the church. The general character of a church should be such as suits the house of God. With this in view and properly expressed, there is no reason why churches should be of forms as various as ordinary buildings. Naturally there will be objections of all kinds to more than accidental departure from the traditional forms; but these objections will rarely come from the men who are building the churches. They will come from the purists and theorists, whose business it is to keep us well reminded of the ideals of the past. Their work is done when they have delivered their reminders and properly impressed us. The people who actually build always desire the handsomest building that their money can procure, and novelty has a charm for them beyond the charms of tradition. While the theorists are discussing past forms and variations of form, the builders are introducing their ideas into actual churches; and if we wish to see how far men are willing to go in order to give full and pleasing expression to their ideas, and to satisfy the peculiar needs of the present generation, we have only to make a study of the newest church structures. These speak more loudly and more emphatically to the inquiring architect than any number of essays.

To my mind there will be no difficulty at all on this question of style, except the difficulty of moderating a too great willingness to adopt the strange and the novel. The chief difficulty will always lie in the question of expense, which has bred so much trouble already, and will continue to breed it as long as architects furnish their share of folly and greed to the work of church building. As the future offers immense opportunities to the architect in ecclesiastical departments, it would really be worth the while of the leading architects to find means of getting into touch with the clergy.

THE CATHOLIC CHURCH.

PAPER IV.

BY REV. H. J. HEUSER.

THE particular purpose and use of a Catholic church building calls for an architectural design somewhat different from that which directs the construction of an ordinary religious conventicle. The difference is emphasized in the monumental churches of Catholic countries, which have thus become the traditional models for the construction of Catholic churches everywhere.

In view of the changed methods in mechanical and artistic treatment and the character of the material used for building in modern times, the question arises whether, and to what extent, the architect is free to depart from the traditional design. The matter has, it appears, special bearings upon the use of columns in the body of the church, upon the widening of the naves, the construction of basements, the addition of towers and other features seemingly ornamental rather than necessary. How far may or should the architect neglect traditional forms in favor of advantages offered from the modern practical and economical view point?

The answer to this question must depend upon the essential purpose which a Catholic church building is to serve. This essential purpose is, in the first place, *conventional*, if I may use the term for want of a better to express the idea of its indicating the gathering of the faithful under one roof. It is, in the second place, *liturgical*.

The *liturgical* appointments are quite as imperative for a Catholic church building, designed upon deliberate principles, as are certain provisions for proper light and ventilation for a living room, and they are regulated by laws which cannot be ignored without ignoring the primary object of the church building as a house of worship.

The liturgical requisites, so far as they affect construction and disposition or arrangement of local detail, may be summed up briefly in the following data:

There must be first a vestibule, the absence of which makes the observance of certain sacramental rubrics, touching baptism, the eucharist, etc., impossible; second, a sacristy, with *adit* and *exit* to the sanctuary; third, a chancel, or sanctuary, of definite dimensions; fourth, a free space for the altar, with no obstruction below it, if the altar is to be consecrated (this commonly affects the position of heaters, iron supports and foundation material generally at the altar end of the church); fifth, a baptistery, or baptistery nook; sixth, belfry (which suggests the tower or steeple construction); seventh, a system of aisles in the nave which allows for processions, free approach to and recess from communion rail, ready access from the nave to the altar at marriage rites, etc.

These essential features being taken into consideration, Catholic architectural symbolism, interpreted to the faithful in the doctrines of the Church, will direct the architect in the further expression of the required appoint-

ments. But these symbolic features are not so essential as those which I have pointed out as conditioning the observance of the prescribed rubrics in the liturgical service. Thus, whilst the cruciform design and the position of the altar toward the east end are not only traditional, but significant, they might easily give way to definite claims of utility. In like manner we see no offence against the laws of liturgical construction if the architect, to accommodate a congregation and to avoid the awkwardness of galleries hindering light and freedom, were to depart from the accustomed narrow nave or triple nave, and turn the space available into one broad area with seats, allowing, however, for the arrangement of aisles, as already indicated.

Regarding the construction of basements for uses of worship, there is no rule. They are not contemplated in the liturgy, and they open the way to numerous abuses, are unhealthy and lack the essential circumstance which inspires devotion. The basement chapel should never be made a permanent feature of the church where regular services can be held. Its use as a crypt is, of course, a different thing, and wholly exceptional in the modern church.

One word touching the monumental character of Catholic church buildings in modern times. Whilst a close imitation of the mediæval models is probably the nearest approach to the perfect symbolic expression which the architect should follow at all times, there is one feature in which the monumental church buildings of to-day differ radically from those of the past. This difference arises from what I have called the "conventional" purpose of the mediæval and the modern church respectively, and affects the dimensions and proportions of the building as well as its appointments. The old churches were built much larger than is necessary or desirable in our day, because they were to be the meeting and rallying centers for all the great popular movements which found their inspiration in the religious faith of the people; and that faith permeated every sphere of social and political activity. It was in the great cathedrals that kings were elected and crowned; here the universities assembled their ten thousand students to listen to men like Albertus Magnus, Thomas of Aquin, or Abelard; here councils and synods were assembled, in which all the people took part. Hence, grandeur and beauty combined to rouse civic consciousness no less than religious fervor; nay, both were so closely bound together that faith freely yielded the divine right to civil authority.

Our churches serve no such purpose; they are houses of worship for a limited and generally well-defined congregation, and our social and civic conditions make the immense cathedral—except in such centers as Rome—wholly purposeless. The old cathedrals were intended to be universities of religious teaching and action; the modern cathedral or parish church is a conventicle for a congregation to be seated in defined numbers, to enter at definite hours, and circumscribed by the limits of parochial jurisdiction.

This difference must, of course, affect the design and probably also the artistic and mechanical treatment of the material employed. Nor need this be done at any sacrifice of harmony or beauty.

The Work of the Boston Schoolhouse Commission, 1901-1905.* I.

BY W. H. KILHAM.

IN the year 1901, the office of city architect having previously been abolished, the planning and construction of new school buildings in the city of Boston and the repairing and alteration of old ones, as well as the selection of sites for the same, were placed under the control of a Board of three Schoolhouse Commissioners, appointed by the Mayor. The previous history of schoolhouse planning in Boston under the city architects, several of whom had been men of high professional standing, forms a chapter of great interest in the architectural history of the city. During the four years that have elapsed since the formation of the present board the story of its work and aims presents points of much greater importance to the profession than does the work of any previous period.

Starting clearly afresh and free from any hampering traditions, the first work of the newly appointed Commissioners was to gain from a general survey of the work in other cities a comprehensive idea of the progress that is being made in American schoolhouse planning and construction. From the information thus gained, added to the data already in their hands, the Board has evolved not only a general type of schoolhouse lay-out, but a uniform system of specifying, of construction and of business administration which it is thought will result in supplying the most approved accommodations at the lowest reasonable cost to the municipality. It is worthy of especial note that the Board is continually working towards an ideal and that its later buildings show a marked improvement over those of the first period.

Having obtained from a general examination a clear idea of the latest ideas in American practice, the next step was to decide what should be the requirements of a Boston schoolhouse. This matter having been settled, the Board could begin on a systematic course of planning a series of buildings proper for the needs of the Boston public school system.

Architecturally speaking, it is also interesting to observe that after the very complete survey of American work which was made the Board has not confined its architects to any definite architectural style. Although it found various localities adopting "Collegiate Gothic," and even New York building schoolhouses on models of Oxford colleges and Loire chateaux, it has steadily favored sensible and businesslike types. Its only suggestions are along the lines given below, as to materials, cornices, roofs, etc., which will be structurally durable and useful. Gables, towers and battlements are not favored. A stack of ventilating shafts is given a simple and dignified outline and let alone, with no attempt to give it the appearance of an attenuated donjon or crenelated turret. Unnecessary porches and projections are suppressed. Windows are flat-headed and kept clear of mullions and transoms. In general the "modern Colonial" or Georgian feeling seems to have prevailed, although there are a few examples which show an English influence.

* During this period R. Clipston Sturgis has been Chairman of the Commission.

The first Annual Report of the Board contains an interesting account of its visits to leading American cities, together with the results of its observation. Between the ninth and twenty-fourth of October, 1901, the Commissioners visited New York, Philadelphia, Washington, Chicago, Toledo, St. Louis, Cleveland, Buffalo and Rochester, for the purpose of examining their school buildings. The general conclusions which they drew from this trip are embodied in the following paragraphs:

CONCLUSIONS DRAWN FROM TOUR.—"As to schoolhouse lots, it is desirable, when the value of the land permits, to take sufficient ground to have playgrounds about the building. When it is not possible to have ample playgrounds it is necessary to make provision for this in the building, either by setting aside the basement floor for this purpose, or by utilizing the roof as a garden, or by a combination of these two plans.

"The best building material seems to be red brick. The buildings should be of fireproof construction, and this is being adopted in every city where it is felt that the finances will warrant it. Wooden floors in corridors are not desirable; either terrazzo, cement or rock asphalt is preferable. The tendency is toward wider corridors.

"The schoolrooms should have wooden floors, maple being in every way satisfactory. It is better to have the classrooms lighted from one side, although some authorities, notably those of Cleveland, do not believe in it. There should be separate rooms for the children's clothing, with entrances from the classrooms rather than from the corridors. The schoolroom doors should contain plain glass panels, in order that the master, when passing through the building, may have a general oversight of the school without actually opening the doors. Painted burlap for dadoes, both in corridors and classrooms, has the unqualified support of the authorities in Chicago and St. Louis, where it is used extensively. It is found advantageous to omit all thresholds.

"Stairways are generally built of iron with treads of wood, slate, marble, North River stone or asphalt. The two latter are preferable to the others, in our opinion. Teachers' retiring rooms are provided in all modern school buildings. Both bookcases and teachers' closets should be built into the rooms.

"The sanitariums should have asphalt floors. The walls should be either painted or of enameled brick. Latrines are used very extensively outside of Boston and might well be used in any of the primary schools in Boston, and possibly in some of the grammar schools. The tendency is to do away with high partitions and in many cases to omit doors.

"The twin stairway in New York is particularly interesting and worthy of use when circumstances permit.* We found that Boston was doing more in the way of gymnasias and bath facilities than any other city with the possible exception of New York. Assembly halls, in grammar schools at least, are not a general feature in schoolhouse construction, but in many places a system of sliding partitions is employed, so that the whole or a greater part of a single floor can be thrown into one room.

"The type of school furniture used in Boston, namely,

* The Commissioners later decided that serious objections to twin stairways existed and have not adopted them.

the individual desk and chair, we found nowhere else except in Washington. It should be said that the Boston type was approved by those with whom we talked, the claim being that it was not used on account of the increased expense.

"Telephone systems connecting the master's room with the various rooms in the building, while adopted in Boston, were not found in any other city. In New York a system of speaking tubes is used, and even that was not considered absolutely necessary. The use of platforms in classrooms has been practically abandoned.

"The ventilating systems are almost as various as the styles of schoolhouse architecture. The general tendency seems to be to use the blower or plenum system either absolutely or in connection with the gravity system. In many places where an elaborate fan system is in use it is not operated except when steam is carried in the boilers for heating purposes.

"From the standpoint of economical and satisfactory construction it is desirable to complete schoolhouses under as few contracts as possible.

"In most places the janitors are called upon to make all the ordinary repairs. In some places they do the general work of cleaning furniture. To obtain satisfactory results the janitor's services should be under the control of those having charge of the repairs of the building."

WHAT CONSTITUTES A TYPICAL BOSTON SCHOOLHOUSE. —Before starting on the construction of a series of buildings it was first of all necessary to determine just what would be included in a typical Boston schoolhouse. While no doubt the popular demand for baths, gymnasias and "educational centers" is a praiseworthy one, the Board felt that the available funds at its disposal would scarcely allow it to undertake work which might properly be left to the bath department or the park department. After conferring with the school committee, the general policy outlined in the following extracts was adopted:

"Your committee has personally visited a number of schoolhouses, including those recently completed, as well as others of an earlier date, but comparatively modern, and has also obtained the opinion of the superintendent upon the subject, and as a result of their investigation are of the opinion that a grammar schoolhouse should, in addition to the hall, class and dressing rooms, contain a master's room, a teachers' room and a storeroom for books; by the latter is meant a room in which text-books and books for supplementary reading may be stored. If the school possesses a library it can be kept in bookcases placed either in the master's office, in the hall or in the teachers' room, or in all. Rooms for woodworking and cookery should be provided wherever rooms for these purposes do not exist in the immediate neighborhood. Neither a sub-master's office, nor separate reception rooms, nor recitation rooms, nor a drawing room, nor a sewing room, nor a laboratory appear to be essential. They are luxuries which can be dispensed with and which ought to be dispensed with under existing circumstances. It is also believed that a gymnasium and baths are not necessary, except perhaps in certain of the more congested quarters of the city. In a primary building one teachers' room and a small storeroom for books are all that are essential in addition to the classrooms and dressing rooms.

"This adoption of a definite policy with regard to schoolhouse construction would tend to produce a certain general uniformity and correspondence between buildings of the same class erected in various parts of the city, not necessarily in their architectural features, for here may well be allowed considerable latitude for the exhibition of taste and skill on the part of the various architects, but desirable from an economic standpoint. It is of course clear that there is a certain type of excellence in construction and material which the city ought reasonably to conform to in new buildings, far in advance of that followed twenty or even ten years ago; but it should not be forgotten that with a fixed and limited amount available for additional permanent accommodations, increase in cost of construction involves a corresponding decrease in the number of pupils to be accommodated, and consequently no one building should be allowed materially to exceed in cost the standard which may be established for guidance to the school plant during the next few years.

"Thus your committee believes and the Board of Schoolhouse Commissioners agrees that the new schoolhouses about to be erected should be plain, substantial structures, built in the most substantial manner, devoid of unnecessary or extravagant ornamentation, but attractive and tasteful from an architectural standpoint, the exterior walls to be in general of plain brick with a reasonable amount of trimmings and the interior fittings such as will meet the requirements of durability and fitness for the several purposes for which they are intended, without being unnecessarily expensive."

GENERAL DEDUCTIONS. —Aside from the general requirements in regard to simplicity in the character of the exterior of the building, thus noted, the Commissioners thought at first that cornices with heavy projections and roofs of steep pitch are alike undesirable. It seemed to them that with the necessity for windows extending to the ceiling line, a cornice with heavy projection would either cast a shadow on the windows of the top story, or if raised sufficiently above the windows to avoid this, would be enclosing more space above the ceiling than is necessary for non-conducting purposes; and that a pitched roof was undesirable unless the space in the roof can be utilized for an assembly hall, which in the case of primary buildings is not required.

The Commissioners therefore suggest that where a flat roof is adopted the cornices should be simple, with slight projection, and the parapets of so little elevation above the roof as to make it not extravagant to flash them completely with copper on the inside, and that where a pitched roof is used, which serves merely as a covering for the building, it should be of as low an angle as is compatible with a tight roof, and with the eaves of such projection and height above the windows of the upper story as not to interfere with their light. After one year's experience, however, the Board concluded that "in some cases it was found that this had been carried to an extreme and that we have been cramped for room to gather the vent ducts together. It would seem as if occasionally a roof of low pitch were really more serviceable and nearly as economical. To keep the schools technically 'first class' the pitched roof must be fireproof frame. With a pitch roof outside gutters point to the use of outside conductors instead of conductors of cast iron

in slots inside, and in this case the board suggests gutters hung free of the eaves."

The following general conclusions were drawn as a guide towards a standard :

Primary rooms should be about 24 by 32 feet to accommodate 50 desks. This, during the second year, was reduced to 24 by 30 feet, and for ungraded classes in the foreign districts, where older children are in lower grades, the size of desk would be increased and the number of them diminished. The largest primary desks are 21 inches wide; they are spaced with an aisle from 15 to 17 inches and 28½ inches apart from back to back. Grammar rooms are 26 by 32 feet for 50 children. The desks are 24 inches wide, the aisles 17 inches, and the desks 34 inches apart from back to back. The width of desks was changed to 23 inches the second year. The children's desks and chairs are the subject of a special report, prepared for the Commissioners from the best authorities by Dr. Frederic J. Cotton. High school rooms are sometimes the same as grammar, but may vary in size and contain desks up to 26 inches wide. The total area of the building on a classroom floor should not be more than double the area within the walls of the classrooms on that floor. The height of the rooms, when lighted from one side, should not be less than 13 feet; the windows should extend to the ceilings and should contain a glass area equal to one-fifth of the floor area—roughly from 160 to 175 square feet, measured inside the sash.

The coat room should be adjacent to the schoolroom at the teacher's end, and have two doors opening into the schoolroom for circulation, but none into the corridor. The teacher has thus more perfect control of the class.

Corridors should be wide, at least 10 feet for a six-room floor plan, and with external light. Staircases should be fairly wide, but preferably not over five feet, and with risers not over six and one-half or seven inches, and even less in primaries. Where toilet rooms are in the basement it is desirable to arrange the stairs so that those coming in and going to the toilet rooms will not meet on the stairs those going up to the classrooms. In most cases it is desirable to have basement entrances, with convenient thoroughfares through the toilets to the staircases. The staircases in daily use should be the fire escapes, and should therefore be easy of access and fireproof.

The toilet rooms in general are in the basement, but, as is indicated by the plans which will be given with the succeeding articles, in certain buildings there are examples of distributed toilets on the various floors. In one building the height of two classrooms serves for three stories of toilets, etc.

In general the simplest forms of fixtures, the most easily cleaned and adapted for thorough ventilation, are the most sanitary. Ease of cleaning should be a prime consideration in the school generally; and a hospital base, a minimum of wood finish in the rooms, and the simplest detail on the stairs are desirable.

The bookcases should be of the simplest description, but with movable shelves, dust-proof and locked. The teachers' desks should be of hard wood, with a plain, flat top. Desks for primary teachers should have one set of drawers, those for grammar school teachers two sets of drawers, with slide, and rail on back.

The furniture for master's and teachers' rooms should be a roll top desk, a lounge, either rattan or covered with an easily cleaned material, a few simple chairs, a bookcase and a good Brussels carpet. An opportunity for a gas or electric stove in the teachers' room is generally advisable, where there is no cooking school.

The construction of all buildings has been determined upon as first class, the additional cost over the cost of second-class buildings being comparatively small, and the buildings being free from shrinkage and the movements necessarily accompanying a building with floors and partitions framed of wood. To take advantage of the law about staircases, it is necessary to make buildings first class throughout, including the roof. In many cases the board would be content to frame the roof of wood, protecting it on the under side with non-combustible material, if it were not for the clause relating to staircases, which provides that in buildings not of first-class construction one staircase shall be enclosed in brick walls and shut in with fireproof doors. Such enclosure the Board considers undesirable, and to avoid this makes the roof fireproof, and the building first class, thereby taking advantage of the law which exempts buildings of the first class from these restrictions.

In the planning of the buildings the Board has found that the rules laid down in the first two reports have been fairly accurate.

These are, first, that an economical floor plan should never exceed an area of double the area of the classrooms on one floor. For example, a primary building having five rooms, 24 by 30, on a floor, should have an area of not over 7,200 square feet.

Second, that a primary building should not contain more than 30,000 cubic feet per classroom, if its classrooms are in excess say of fourteen rooms, and it should not exceed 35,000 cubic feet per classroom, if it has a smaller number of rooms. On both sizes the cost is to be estimated at about 22 cents; for example, with these figures the cost of a ten-room primary would be \$77,000, and the cost of a twenty-room primary would be \$132,000. A grammar school should not exceed 40,000 cubic feet per classroom, if it is a building of over eighteen rooms, and a building of less rooms should not exceed 45,000 cubic feet per classroom, the cost again being put at 22 cents per cubic foot. The cost thus arrived at must include all trades, the building ready for furniture and the grounds entirely finished. It does not include commissions or furniture.

Third, that the exterior should be of the simplest description, it being understood that with the smaller buildings the utmost economy must be observed to keep within the limits, and that with a very large building slightly more freedom is allowable.

Fourth, that the grounds about the buildings shall be entirely completed and included in the contract, and that they shall have brick-paved playgrounds for boys and girls, not necessarily separated, brick-paved walks, a brick-paved, cement-set road for coal, and the remaining space laid out either for a permanent planted space or else for experimental gardens for the children. The area devoted to these purposes will, of course, vary slightly with the position and character of the building and the amount of space that the Board is able to buy for such purposes.

Brick Architecture in Denver. I.

WHILE Denver may be regarded as a brick built city, it is a notable fact, nevertheless, that there is, comparatively speaking, very little that is interesting from the architect's standpoint.

During the last few years Denver has made much progress in the organization of civic bodies, with the one object of controlling and elevating all matters of art pertaining to the city and county of Denver.

The recent adoption of the new charter by the municipality offered an excellent opportunity for the establishment of the Art Commission, the credit of which is due largely to Mr. Henry Read, an artist of this city. The commission consists of six members, of which one is an artist, one a sculptor, one an architect; the other three are non-professional, and the mayor an *ex-officio* member. No work of art can become the property of the city and county except by the approval of the Art Commission.

The Municipal Art League was established in 1900, "to procure united action in the promotion and protection of public works of art and of artistic municipal improvements." It consists of thirty members, representing twelve permanent clubs and organizations.

Another organization of note is the Artists' Club, which has done much towards fostering and improving the art conditions of this city.

The Park Commission is also showing most commendable enterprise by acquiring large tracts of land throughout all portions of the city, and with the building of the new boulevard which runs along the banks of Cherry Creek, a stream which, under its present conditions, is most unsightly, will make a most superb and sightly boulevard. Other boulevards of similar importance are either now being constructed or planned, all of which will form a most beautiful system of drives.

Getting back to the subject of brickwork, one of the best brick buildings in Colorado is the Antlers Hotel, located at Colorado Springs, a small city a few miles south of Denver, most superbly located at the foot of the mountains. The architects are Varian & Sterner. It is built of buff brick and white terra cotta, and has a light red tile roof.

Two club buildings are illustrated, the first, the University Club, by Varian & Sterner, built of two shades of buff brick and a white lava stone; and the second, The Woman's Club, by Fisher & Huntington, built of a light gray brick and greenish gray sandstone.

Denver possesses very little ecclesiastical work of merit, this being especially true of interesting brickwork.

The Jewish Synagogue, by the late John J. Humphreys, is, perhaps, the most interesting. It is constructed of a light colored buff brick and gray sandstone.

The church by H. T. E. Wendall is built of buff brick and gray sandstone. While this building is very much out of scale, it is not lacking in interest by any means.

The Consumptives' Home in North Denver, Varian & Sterner, architects, is a very successful building; the piazza, connecting the two wings, recently added by Mr. Sterner, has improved greatly its general appearance. The chapel, connected with the Home, by Mr. Sterner, is a very successful building and well suited

to its environment. The interior is lined with a buff brick.

Mr. Sterner's own residence is built of rough red brick and painted a dark yellow ochre color with a dark green roof.

Very little of the so-called modern French style has been attempted in Denver. A residence in this style, by Fisher & Huntington, is illustrated. The building is laid up in a beautiful buff shade of gray pressed brick and white terra cotta ornamentation.

The house by Marean & Norton is buff brick with a light colored red stone basement and a red roof. A house of somewhat similar style, by Fisher & Huntington, is built of gray brick. Molded brick of similar color, in a darker shade, is used for the window jambs and in the arches.

The one-story house by Wagner & Manning is a rather pleasing solution of a small house.

Two other houses illustrated, by Gove & Walsh, are constructed of gray pressed brick.

The dark buff brick residence with white terra cotta ornament, by Boal & Harnois, illustrates one of Denver's most successful houses.

THE HOUSING OF THE POOR.

SOME time since the announcement was made that Mr. Henry Phipps, the Pittsburg steel magnate, had made a gift of one million dollars to be used in providing improved tenements for the congested sections of New York City. A beginning is to be made at once, the first set of plans carrying out Mr. Phipps's intentions have been filed with the tenement house department, and it is expected that the structures will be ready for occupancy in the spring. The building will have a frontage of 180 feet on the street, and be built around two open courts connected with the street by archways 25 feet wide, extending through four of the six stories. The courts will each have a fountain and a certain amount of planting, and the tenements will have an unusual amount of what we term modern improvements, such as steam heat, electric lights, air coolers, whatever that may be, garbage incinerating plants, shower baths for each family, a room on the first floor for baby carriages, a kindergarten and a roof garden; and all this will be offered at rentals not exceeding in any case fifteen dollars a month for four rooms. His house will be filled and have an immediate long waiting list not drawn exclusively from those who are now paying five or ten dollars a month for poor quarters, but rather from the better class of mechanics who may be now paying twenty or twenty-five dollars for quarters less eligible than Mr. Phipps is offering for fifteen. The resulting condition in that immediate neighborhood will be overcrowding of the already thronged tenements. This is the ever-discouraging feature of attempts to improve the sanitary conditions of the miserably poor. When better houses are put up they are always filled by the well-to-do and not by the miserably poor, and these latter, in every case, as has been proven in Paris, London, Glasgow, New York, Boston and Chicago, are worse off rather than better. We would not argue from this that efforts such as Mr. Phipps has made are to be deprecated. Simply the millennium has not yet arrived, and the solution of the tenement house problem may be as far off as ever.



ANTLERS HOTEL, VARIAN & STERNER, ARCHITECTS.



CONSUMPTIVES' HOME, VARIAN & STERNER, ARCHITECTS.



PIAZZA, CONNECTING WINGS, CONSUMPTIVES' HOME.



WOMAN'S CLUB, FISHER & HUNTINGTON, ARCHITECTS.



UNIVERSITY CLUB, VARIAN & STERNER, ARCHITECTS.



CHAPEL FOR CONSUMPTIVES' HOME.

F. J. Sterner, Architect.



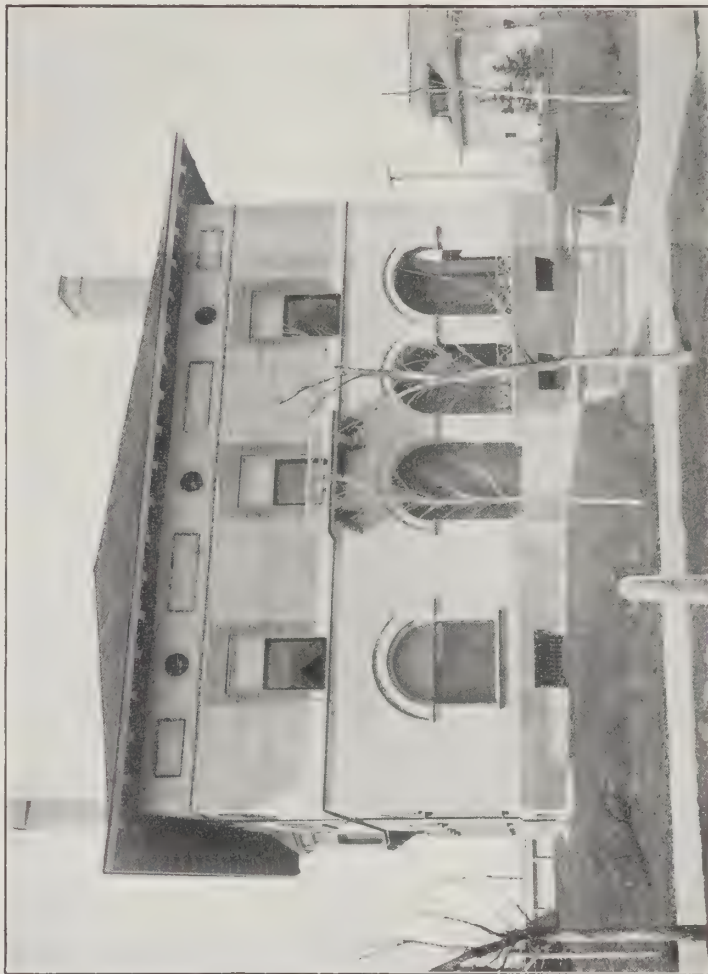
SYNAGOGUE, JOHN J. HUMPHREYS, ARCHITECT.



CHURCH, H. T. E. WENDALL, ARCHITECT.



HOUSE BY BOAL & HARNOIS, ARCHITECTS.



HOUSE BY MAREAN & NORTON, ARCHITECTS.



HOUSE BY GOVE & WALSH, ARCHITECTS.



HOUSE BY FISHER & HUNTINGTON, ARCHITECTS.



HOUSE BY WAGNER & MANNING, ARCHITECTS.



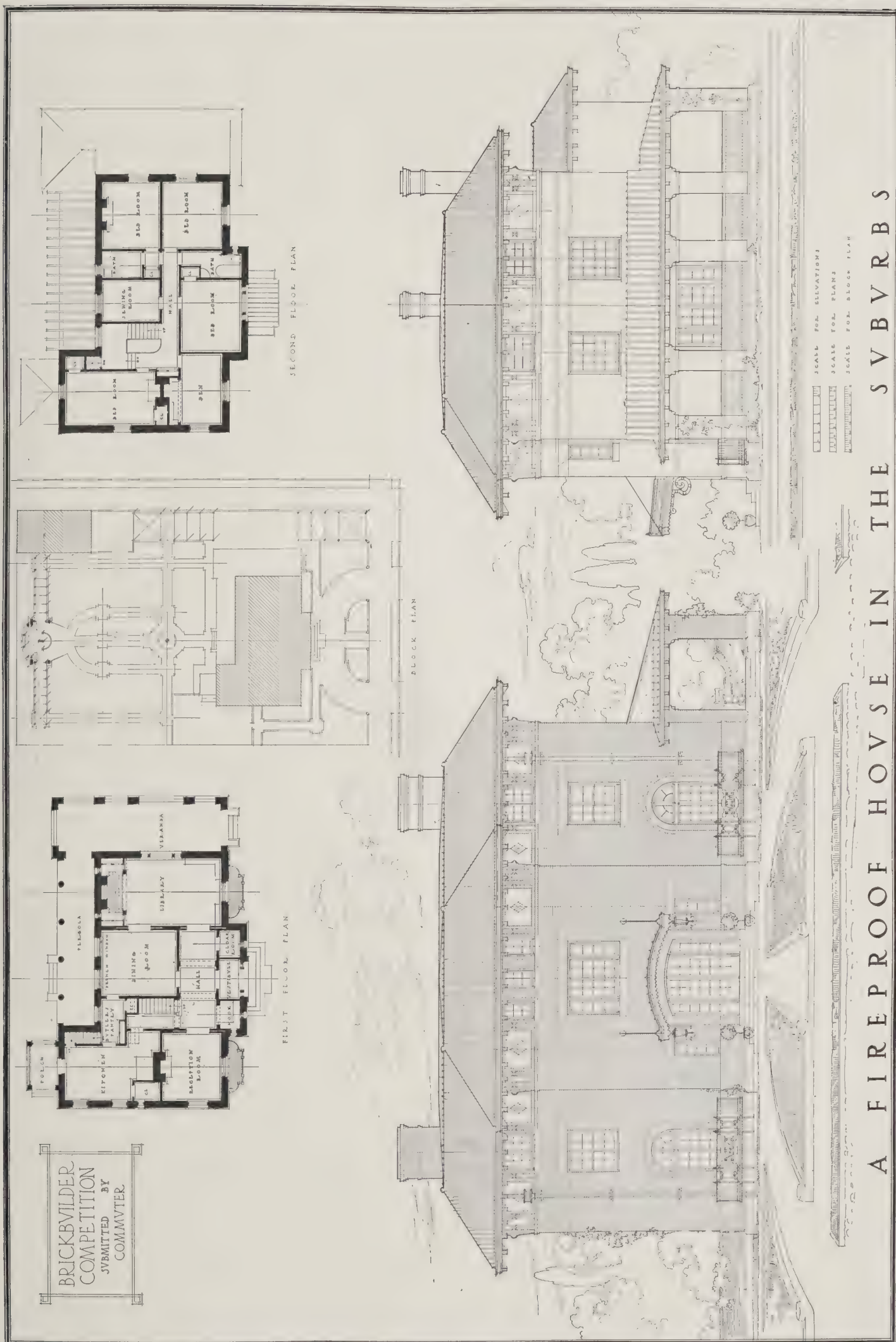
HOUSE BY GOVE & WALSH, ARCHITECTS.



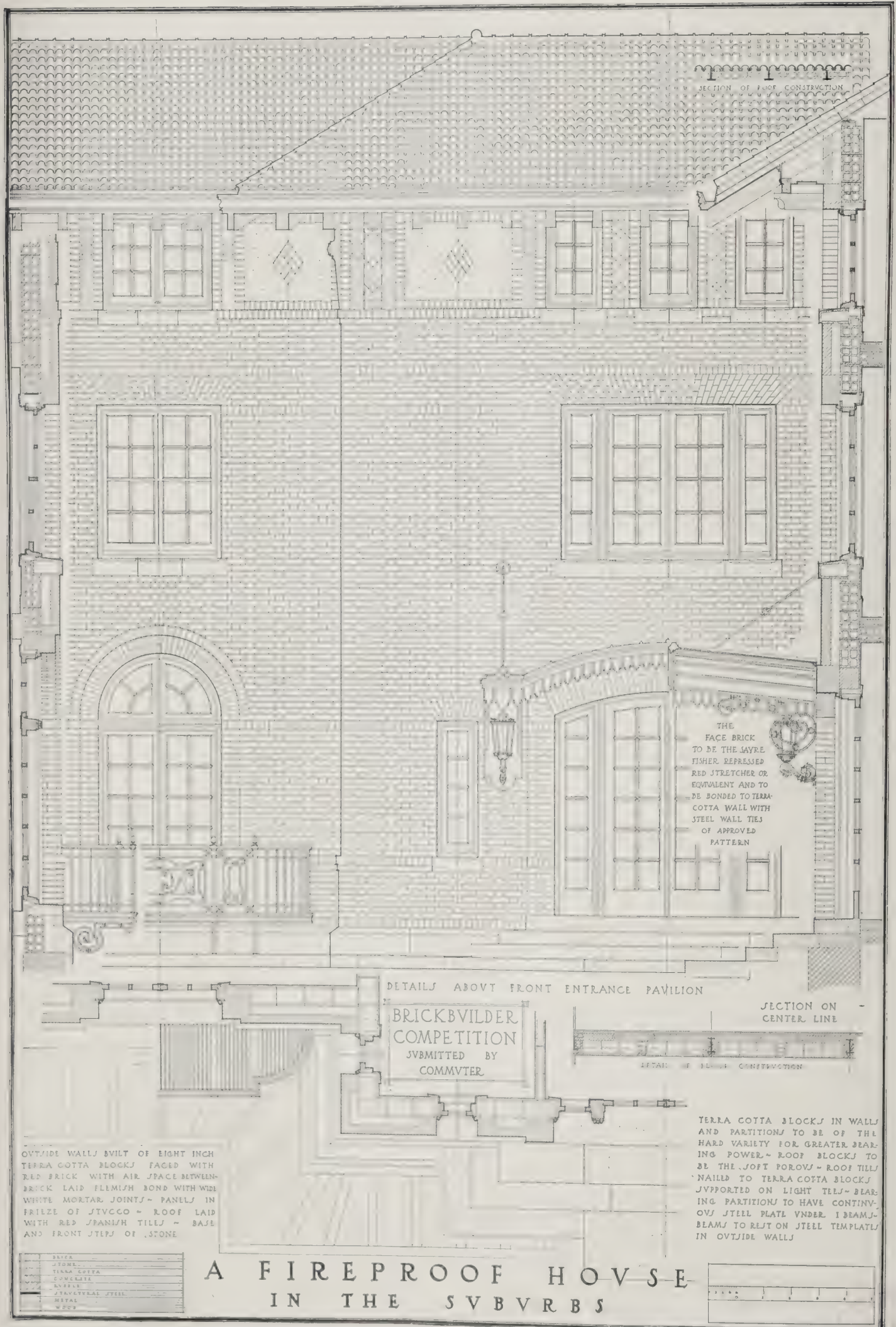
HOUSE BY FISHER & HUNTINGTON, ARCHITECTS.



HOUSE OF F. J. STERNER, ARCHITECT.



FIREPROOF HOUSE COMPETITION.
Mention Design, Submitted by Russell Eason Hart, New York City.



Tile and Faience Work in France.

II.

BY PAUL DEVOE.

THE character of French work has always been that of delicacy of finish. The constant desire to refine in idea, in form, in color is apparent even in the centuries in which other nationalities have produced virile but crude workmanship and design. To the French critic no amount of barbaric splendor, of grandiose concep-

lowered towards neutral. The flaming yellows and reds of India, the black and gold and red of Venice, the depth of blues in the Persian tiles are but occasionally seen in the walls of France, but in their place are deep cool grays and soft browns, neutral greens and mellow reds, and a profusion of delicate tints, the colors of Gobelins tapestries. And associated with this comparative sobriety of color, and this desire to avoid violent contrasts or aggressive schemes, is great delicacy of line, of grouping of forms, of touch in draughtsmanship and of purity of tone. The tiles of France, whether they be



WALL TREATMENT WITH ENAMEL TILES.

tion, of general effectiveness associated with undeveloped forms, could excuse lack of the final touch, the completed detail. A standard of achievement based upon such premises must include those slight shades and modulations which the French express by the term "nuances." The avoidance of violent contrasts, the softening of tones, of colors, of intensities, are thoroughly characteristic of all French art. So much is this the case that subtle shades of neutralized colors are known as French grays and French greens. Mauves, lilacs, lavenders, pale rose and delicate blues all suggest the gamut of the French palette, and if the tones are deepened they are

dull surfaced without glazing, or high-fired dull glazes or lustrous glazes, are notable for the precision of their drawing and a harmony of tone which at times approach monotony. The earlier examples of the thirteenth and fourteenth centuries are simple tiles, without glazes, in which the patterns are simple and contrasts produced by the differences in clays only. They are soft, low-toned reds, yellows and grays, and the ornament does not fill the field as in Oriental tile and in those of Spain, but is firmly defined upon a larger proportion of field than in any other tile. Also even in very simple design all stem lines are firmly drawn and leaf forms clearly defined.

There is a constant tendency to resort to naturalistic representation rather than to conventional precedent. It is characteristic of all naturalistic ornament, which partakes largely of actual representation, that to be successful it must be done by a very skillful hand. There can be no attempt to portray nature but what will enact a severe penalty from all except masters of draughtsmanship. Conventional forms are a law to themselves and justify themselves by beauty of composition, of tone or of color, but representation of natural form invites direct comparison with the actual object, to the lasting condemnation of the representation if it be unskillfully done. It is for this reason that so little naturalistic work commands respect. If any set of draughtsmen or designers could be expected to succeed in this type of work it is the French, whose precision of drawing and delicacy of color are unsurpassed. Their very skill has probably led them towards the portrayal of foliage, of flowers and of

tiles of exceptionally delicate tints, producing an effect of daintiness, of freshness, of that quality which the French term "confection," and which are distinguishable from the tiles of other nationalities merely by this quality. As has been stated, there was no attempt to get the richness of effect of Oriental or of Spanish tile. The third variety, that of painted tile, does not in any way resemble the Dutch or English or Spanish painted tile. Much of the field remains intact and the painting is that of delicate flowers, or of finely drawn medallions resembling the china painting of Sèvres, of Dresden; in fact the French tiles of this type seem to be dainty pieces of china. If used in large surfaces the effect is that of a flowered chintz or sprigged muslin. They are peculiarly adapted to boudoirs and small baths. The patterns are simple, not complex; the painted areas are not broad, but painted with the point of the brush, not the side, and there is but little if any running of the color in



SIMPLE BUT EFFECTIVE TILE PATTERNS.

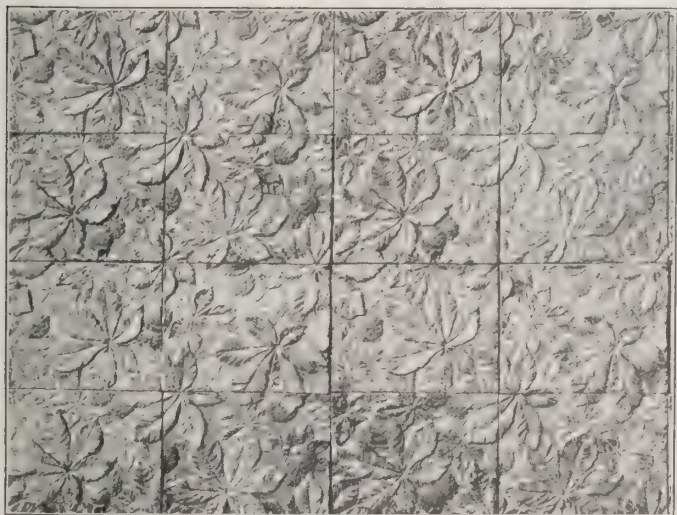
natural forms in their painted tile, while in their plain tile their appreciation of the slightest variations of color has led them to subtle and delicate tones. It is impossible therefore to give an idea of the individual character of French tiles by photograph. The shapes may be the same as those of English or of Spanish tile, but the coloring is of a totally different character and quality. Delightful combinations of pure tints in lines and zones around fields are often used on walls and on floors and ceilings. The bisques are like those of porcelain, the glazes fine and clear. The molded tile have finer profiles than are usually to be found in the tile of other nations, and the modeled tile are very beautifully finished. We find then that tile in France, until within a few decades, were of three varieties; first, those which were used for floors in churches, large halls, etc., and which were often used in combination with stone as borders about tablets, around windows, etc., in fact in a very similar manner to their uses in Italy and to the use of terra cotta plaques. The patterns are simple, largely geometric. The second variety was that of plain glazed

the firing. As has already been stated, naturalistic design demands mastery of drawing, and many of these tile were designed and actually painted by artists who did them more as pastime than as their more important work, which was that of landscape painting, designing for tapestries or for decoration. Many of them are signed. The result is that the work is finished, is sophisticated and has little of the naïve quality of work done by peasants or by draughtsmen of inferior ability. Its beauty lies in the skill with which it is done as much or more than in its general effect. For this reason any imitations of these tiles at once announce that they are forgeries. There is nothing feebler in its effect than the imitation of a French painted tile, as there is nothing of its kind more cleanly cut, delicate and skillful than the original.

The desire to increase the size of the individual tile and to practically produce plaques of clay of sufficiently even surface for floor or wall surfaces has been especially evident in the tile factories within the last twenty years. The difficulties have been gradually overcome. To bake

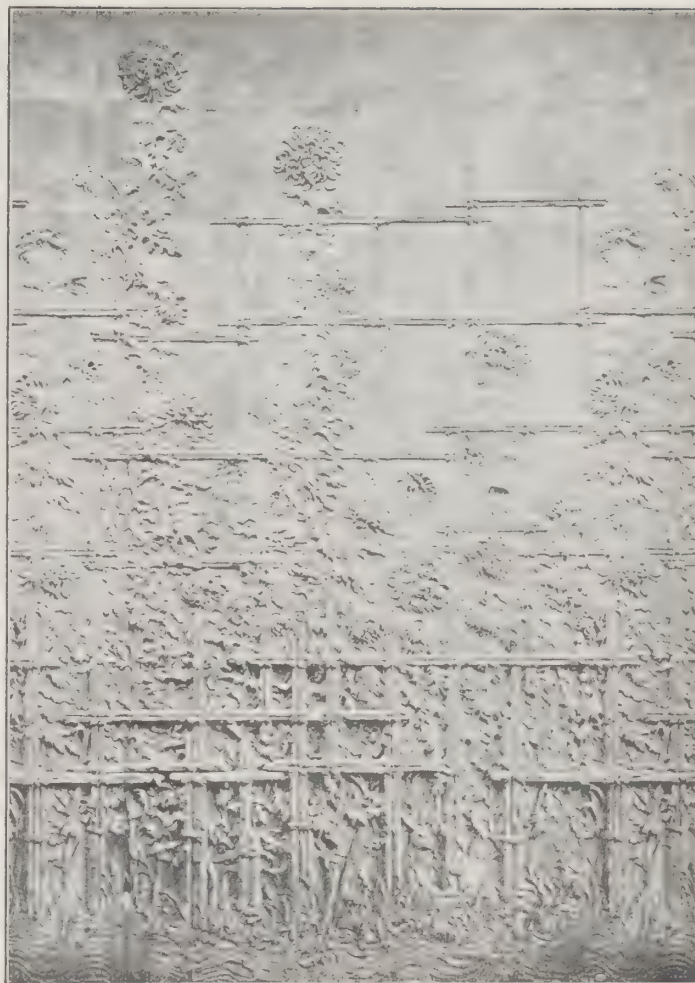
a large mass of clay homogeneously so that the center should be equally fired with the surface and edges, and there should be no warp or twist or crack, required an intensity of heat which overwhelmed and burned out the usual glazes. As a result experimental effort was devoted to obtaining glazes which would stand very intense heat, and substances which could be incorporated with the clay and which would color it in the firing, etc., and various degrees of success have been obtained, and the so-called sharp-fire clay has appeared. The claims that are made for this are fully substantiated by the tests to which it has been subjected in the last few decades. It possesses great strength, imperviousness to moisture and consequent durability, its glazes or coloring are incorporated with its mass and it can be produced in large slabs or plaques with precision of edge and uniformity of surface. The difficulty of obtaining large floor tile which would lay evenly and not leave depressions in the floor has been overcome.

There has also occurred a very natural consequence to the enlargement of the superficial area of the tile. So long as tile were from four inches to eight inches in their longest dimensions, the field of each was necessarily limited, and the size of each unit set to a great extent the measure of the repeat of its ornament; but now that each piece can be made of materially greater area the field invites to a totally different type of ornamentation, it becomes the background for a picture or a factor in a large motive. The wall as a whole is treated as a composition, and the divisions between the tiles are merely necessitated by the exigencies of firing the pieces. These pieces can be of



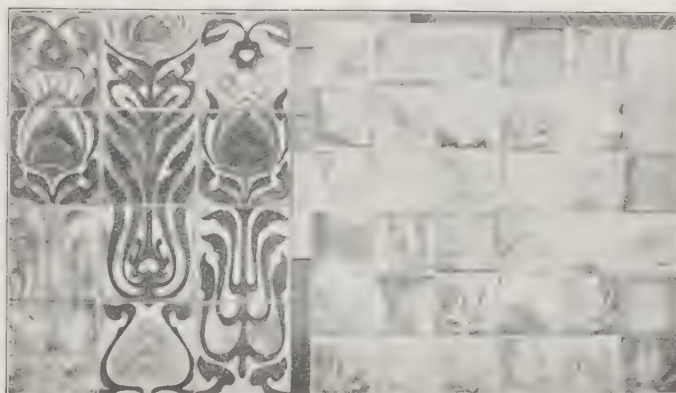
TILES FOR WALL SURFACES.

any size or shape, they fit together like a child's dissected map, and each piece can be so accurately made and fitted that no discrepancy appears at the joints. In a certain sense this type of wall decoration has lost the character of the material, and is merely making a large composition in an imperishable material, the joints being occasioned only by the limitations of firing. Especially is this the case with the modeled tile. These are so exquisitely made that in most cases they are done by a sculptor of very considerable ability, especially by one who is a master of low relief, a medalist. It has always been characteristic of French designers that they have either refused to be bound by, or have ignored the limitations of materials. If they wish to produce a certain

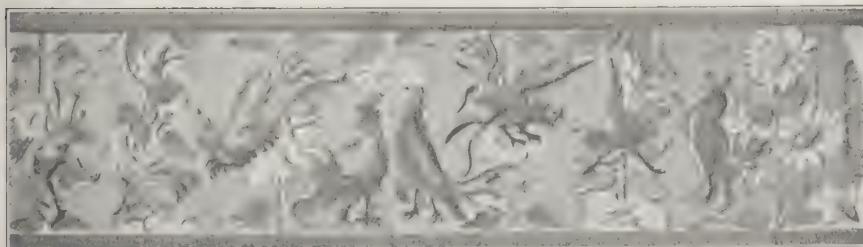


DECORATIVE PANEL IN TILES, THE CHRYSANTHEMUMS.

effect, to display a certain desired composition upon a surface, they do not hesitate to do it in any material they wish, regardless of the fact that no such result would have evolved from the natural development of the material itself. They have the pride, the arrogance of superlative skill. To a certain extent this attitude is Jesuitical, the end obtained is assumed to justify any means employed. It should be apparently obvious that a surface covered with identical units, such as tiles, suggests repeating patterns or at least compositions with repeating factors, but the French treat these surfaces exactly as though they were whole and not composed of a number of parts, as if they were a canvas, not a mosaic of large scale. The skill with which they draw and color the ornament almost persuades admiration, almost convinces that the effect is satisfactory, but there remains an after-math of desire that work so skillfully done should have



TILES FOR WALL SURFACES.



A FRIEZE IN HIGHLY COLORED TILES.

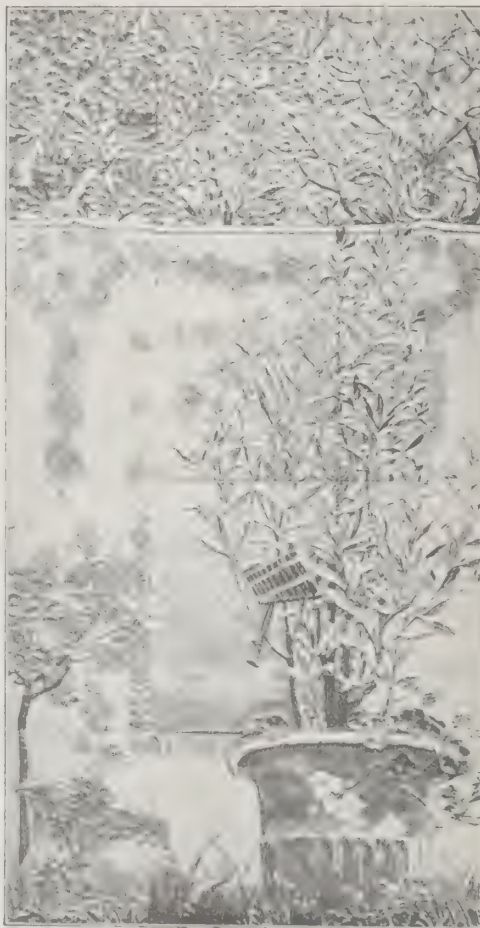
been more logically conceived. Occasionally there is an indication that however free from the trammels of conventionalism may be the general design, there is a recognition of its component parts. Such a recognition is manifest in the chrysanthemum pattern growing behind a bamboo lattice, the stems of the bamboo following the joints of the tile. There is no new conception, but the variation of size in the tile, each corresponding to the rectangle enclosed by the pieces of lattice, is both ingenious and effective. There is also in these modeled French tile a very strong feeling of the material in the surface modeling. They are unmistakably of clay and modeled by hand; there is no indication of stamped work, or resemblance to repoussé work. In spite of the fact that they are cast in molds, the character of the original modeling has been preserved, the modulations remain, the edges are crisp and clean-cut. This alone would produce an impression of finish superior to many other varieties of tile.

The laurel and rose design exemplifies the care with which details are inserted. Certainly modeling cannot be carried further than it is in the thistle leaves and the rose garlands. Each vein and petal is not merely indicated but carefully drawn, and a delicate dike is raised between each area of color so that its edge may remain intact. It will be seen that any such designs as these can only be produced in the finest bisque, almost equal to kaolin, as the fine lines require such precision, and that they can be made by only the most skillful of sculptors and modelers.

Of the grades of tile, inferior in workmanship and draughtsmanship, but by no means inferior in general effect, which are to be found in England, in Holland, in Italy and in Spain, in such as the Delft tiles and those of Perugia and Trajana, crudely but freely drawn, with a separate pattern on each tile, there are few to be found in France. Village industries have succumbed before the accomplished products of large manufactories. Such tiles are appreciated as quaint, as naïve, as mediæval and as curiosities, but are not considered as more than expressing the past or an uneducated period of art, which is hardly worthy of imitation. Imitative work, excepting in the reproduction of antiques, is not sympathetic to the French designer, who is constantly endeavoring to produce novel effects, often at the expense of failure in the results.

Occasionally, however, there is to be found a type of work which, while individual in its detail, produces a similar effect to the encaustic tile of Italy or of Spain.

The use of tile, either of the usual type or of sharp



WALL TREATMENT IN ENAMEL TILES.

signing needs no further elucidation than is apparent in these buildings, it is in the details alone that novelty need be attained. There is no reason why Occidental art should not employ tile equally well as has Oriental art, but it should not neglect or deny the lesson already taught.

The illustrations chosen for this paper are representative of the more decorative uses to which enameled tiles are put by the French. No attempt has been made, because it seems unnecessary, to show what might be termed regulation tile work, which exists in great abundance and in nearly every form of private and public building.



fire clay, upon the exterior of buildings in large surfaces is increasing in France as it is in Germany. There is a certain amount of Renaissance of color decoration upon façades. It is doubtful if large set scenes, so to speak, of tile will ever be popular; they are too spectacular, too theatrical in effect, but in zones, in friezes, in spandrels and tympana, around the jambs of windows and doors, in panels in the walls, tile surfaces are wonderfully effective, adding an element of imperishable color which gives additional charm to form. There already exist admirable precedents for work of this character in Oriental architecture. One has only to see the walls of the houses of Damascus and of Broussa, the minarets and doorways of Tangiers and Tetuan, to realize the superb possibilities of the exterior use of tile; and it is to be noted that these are great sheets of color confined by borders, that they are not pictorial, but are purely coloristic, and that they have long ago solved the question, if question it ever has been, of how to use tile. The method of attack in tile de-

Editorial Comment and Selected Miscellany

SOMETHING NEW IN STRIKES.

A CASE of rather unusual interest is now being tried before the Supreme Court of Massachusetts. The Norcross Brothers Company, who were building the Harvard Medical Schools at Longwood, near Boston, had, as a part of their contract work, to build a number of flat interior arches of brick ground to fit the form of the arch. This grinding they were proposing to have done at their yard, where they had special machinery for the purpose. But the Bricklayers' Union, hearing of this, entered a protest, claiming that the work of grinding these bricks must be done at the building by the bricklayers, and that the Union laborers would decline to set any brick ground away from the premises.



FOUNTAIN IN HOTEL CORRIDOR.

Executed in Architectural Faience by Rookwood Pottery Company.

The builders thereupon did the grinding and set the bricks together at the yard to form a solid lintel, which they then told the bricklayers to set in place at the building. Whereupon the Union replied by striking upon all of the Norcross work. An injunction was then applied for to the Supreme Court, and it is on this injunction that the argument is now being held.

This is by no means a new question, as it comes up in one form or another nearly every year, and the fundamental principle involved is the recognition or refusal of the right of the union to dictate as to how the work shall be carried on. There is no doubt in the mind of nearly every candid person that the ultimate result of the labor agitations will be for the improvement of the individual and consequently the bettering of the laboring classes as a whole. On the other hand, the most ardent advocate of the union principle can hardly



A MANUFACTURING BUILDING, CHICAGO.

Howard Shaw, Architect.

deny that of late years those having the direction of the union in their hands have at times grossly abused their power, and have done much harm to their own interests and to the community. The fact that good will, in the long run, come out of questionable methods certainly does not excuse the policy which has been so often followed, and it is greatly to be regretted that men of the



A SMALL BLOCK, CLEVELAND, OHIO.

William R. Watterson, Architect.

stamp of Mitchell for the miners or Arthur for the steam engineers have not yet arisen to take a directing hand in the affairs of the building trades' councils.

It may seem a bit Utopian, but we believe the time is coming when labor will be so thoroughly organized that the present system of contracting will be entirely changed. Contracts for labor will be made directly with the labor organizations, and they will have the moral power to compel the faithful obligations of contracts, both as to amount of work and of implied contracts as to quality. The so-called walking delegate, who has wrought so much harm both to the contractors and to the workmen, will cease to exist, because there will be no further need of his services. Labor will be a



THE NEW YORK. THE BESSEMER. POWER BUILDING.

Three new buildings erected in Pittsburg for Henry Phipps, Esq. Grosvenor Atterbury, Architect for two at left. All fireproofed throughout with Standard System, National Fireproofing Company, Makers.

rights and limitations.

The early fights of the unions were for a decent wage and a reduction in unreasonable hours of labor. The necessity for such contests has practically gone by. The fight now is, after all, in its essence, one for recognition of the union. Whether it deserves to win in individual cases or not depends upon whether the contentions are fair or otherwise.

In this particular case to which we have referred, the position of the unions

is entirely wrong. If carried to its logical conclusion it puts a premium upon poor bungling workmanship, and sets skilled labor at a discount.

CUTTING DOWN THE COST.

A VERY common experience with every ambitious architect is that after having expended perhaps months of thought and study upon a design and having worked his personality, as it were, into the preliminary studies,



DETAIL BY CLINTON & RUSSELL, ARCHITECTS.
Standard Terra Cotta Company, Makers.

unit, and we cannot think so poorly of humanity as to believe that that unit will be measured by the stature of such men as Sam Parks, or that the mechanics themselves will be so blind to their own interests as to permit bad or indifferent workmen to set the pace for the whole, as is unfortunately so frequently the case now. Furthermore, the most inexcusable feature of present trade unionism, namely, lack of good faith in keeping contracts, is bound to be remedied in proportion as the workmen themselves are educated to more fairly appreciate their



DETAIL BY MCKIM, MEAD & WHITE, ARCHITECTS.
Atlantic Terra Cotta Company, Makers.



DETAIL OF FAIENCE PANELS AND FRIEZE FOR SOUTH
FERRY STATION OF NEW YORK SUBWAY.

Heins & La Farge, Architects. Panels executed in dull finish colors, greens, yellows and brown. Frieze in solid red glaze, with white blossom. Made by the Hartford Faience Company, Hartford, Conn.

he finds that for reasons of business economy he is obliged to cut his creation down to the quick and throw away as it seems all the results of his earnest, intelligent study. There is only one compensation for this condition: the resulting building is sometimes far better for the pruning process. No building can be successful



GATE AND LODGE. Jarvis Hunt, Architect.
Roofed with Ludowici Shingle Tile.

which fails to meet practical requirements. Art which is not backed up by common sense can be classed as nothing but a failure, and in the conscientious attempt to give the best study to an architectural design it is not impossible that practical considerations might be ignored to



DETAIL BY WELCH, SMITH & PROVOT, ARCHITECTS.
Brick, Terra Cotta and Tile Company, Makers.

such an extent as to nullify the results of artistic study. We would not say that every building which is cut down is the better for it, but simplicity is often the determining cause in really good art, and it need not be always considered a hardship if the architect is obliged to cast aside some considerations of pure art on account of cost.



DETAIL BY U. J. L. PEOPLES, ARCHITECT.
Conkling-Armstrong Terra Cotta Company, Makers.

BUILDING OPERATIONS FOR SEPTEMBER.

THE strong building movement of last month continues with little if any abatement, as appears from

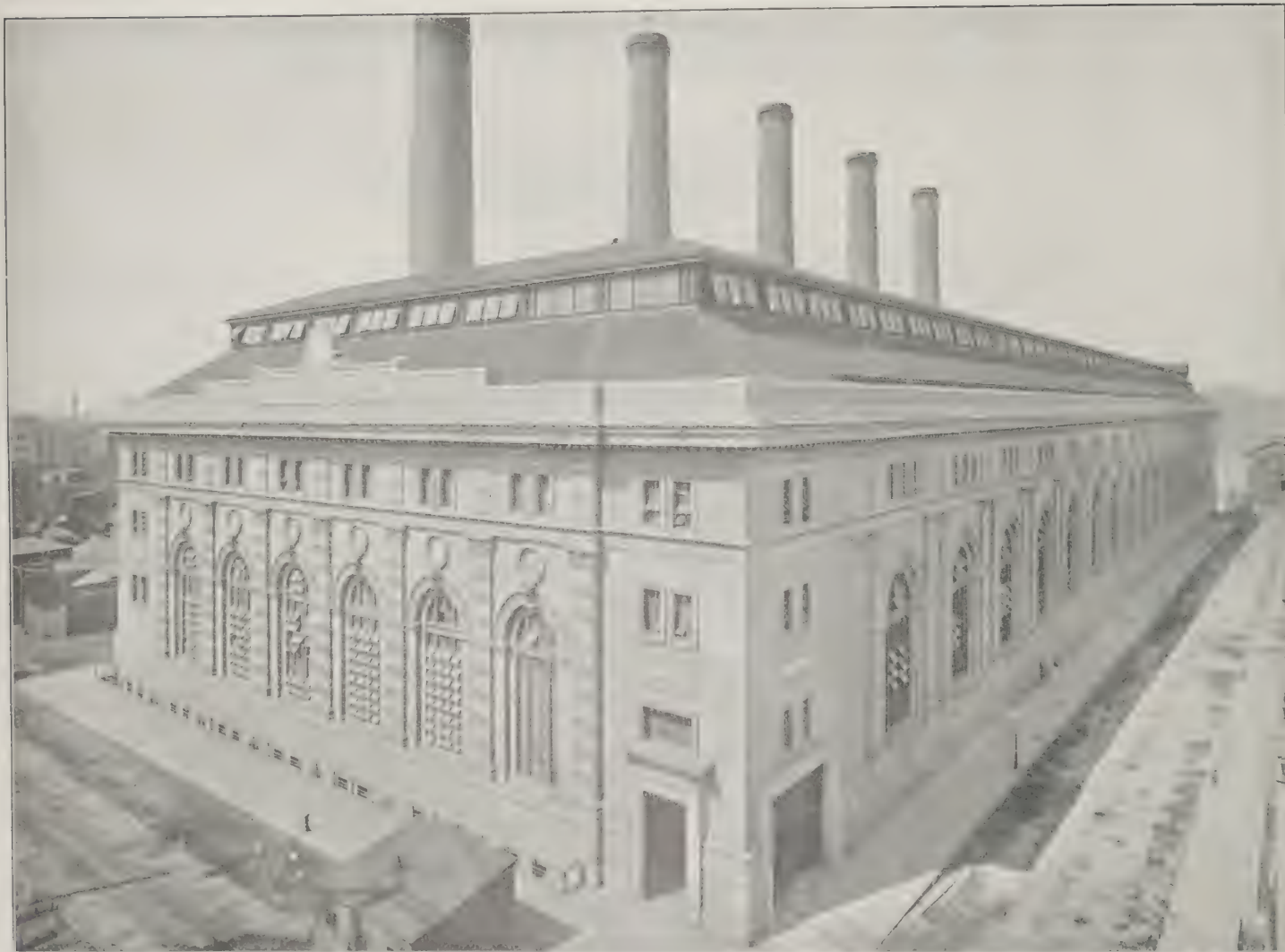


DETAIL BY ERNEST FLAGG, ARCHITECT.
Excelsior Terra Cotta Company, Makers.

reports received by *The American Contractor*, New York, from the leading cities of the country, showing the building permits issued during September as compared with the corresponding month of last year. The gains shown are general, decidedly large and so distributed as to show that the impetus to building operations is not due to local causes. In Greater New York the gain is 85 per cent as against 100 per cent in August. This is really a most gratifying showing, since with winter near at hand, when operations are conducted with greater difficulty, a doubling of last year's figures could scarcely



DETAIL, AUDRY & BENDERNAGLE, ARCHITECTS.
Northwestern Terra Cotta Company, Makers.



NEW INTERBOROUGH POWER HOUSE, NEW YORK CITY.

(The largest power house in the world.)

Built inside and out of brick made by Sayre & Fisher Company.

be expected. Permits aggregating more than twenty-one millions at the beginning of autumn is a remarkable and most promising showing. Chicago reports \$7,349,150, a gain of 31 per cent, as against 80 per cent last month, but even this gain is remarkable when the season of the year is taken into account. The following figures express the percentage of gain of the cities that make the best showing: Allegheny, 111; Buffalo, 140; Cleveland, 66; Dallas, 84; Detroit, 93; Duluth, 110; Harrisburg, Pa., 158; Kansas City, 63; Louisville, 73; Milwaukee, 112; Mobile, 172; Nashville, 133; Newark, 232; New Orleans, 54; Philadelphia, 44; St. Paul, 102; Syracuse, 237; Wilmington, Del., 296. It thus appears that the present building prosperity is widely, almost universally distributed. The losses are few, and, with the exception of Pittsburg, are

confined to the smaller cities. In September, 1904, a single permit of \$3,500,000 was issued in Pittsburg.

INTERBOROUGH POWER HOUSE.

THIS building occupies an entire block bounded by 58th and 59th streets and 11th and 12th avenues, New York City. It is the largest power house in the world. The fronts of the building required 750,000 brick, dark gray Normans. In the interior there were used 600,000 buff brick and about 300,000 enameled brick of cream and brown shades.

All the bricks employed in the building were furnished by Sayre & Fisher Company, including also the radial brick which were used in the chimneys. These chimneys were erected by the A. Custodis Chimney Company of New York City.



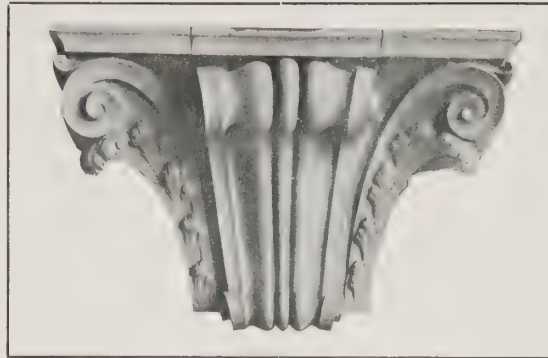
DETAIL BY ATLANTIC TERRA COTTA COMPANY.



DETAIL OF CORNICE, CREAM OF WHEAT BUILDING, MINNEAPOLIS.

Harry W. Jones, Architect.

Terra Cotta made by American Terra Cotta and Ceramic Company.



DETAIL BY NEW JERSEY TERRA COTTA COMPANY.

American Trust and Savings Bank, Chicago, Jarvis Hunt, architect; The United Engineers' Club, New York City, Hale & Morse, architects; a large building for the Merchants' Refrigerating Company, New York City, William H. Birkmire, architect.

IN GENERAL.

The large warehouse (known as the Ingram Warehouses), illustrated on page 196 of THE BRICKBUILDER for September, was the work of Ellicott & Emmart, architects, of Baltimore, and not Wyatt & Nolting, as stated.

Andrew P. Cooper, architect, Uniontown, Pa., has opened a branch office in the First National Bank Building at Connellsville, Pa. Manufacturers' catalogues and samples are desired.



HOTEL JERMYN, NEW YORK CITY.

Mulliken & Moeller, Architects.

Terra Cotta by New York Architectural Terra Cotta Company.

pany: Guaranty & Trust Building, Broadway, New York City, Howells & Stokes, architects; the new Courthouse at Greensburg, Pa., William Kaufman, architect; The

The following new buildings will be fireproofed with the Standard system of fireproofing, manufactured by the National Fireproofing Com-

WANTED—A good architectural draughtsman can secure permanent employment. Send references and sample of work to Shand & Lafaye, 1328 Main Street, Columbia, S. C.

WANTED—A competent architectural draughtsman. Apply to D. A. Bohlen, Architect, Indianapolis, Ind.

WANTED—To handle account of some good corporation doing business with architects, engineers and contractors, on either a salary or commission basis. Extensive acquaintance west of Missouri River, including California and the Northwest. Present location Denver, Col. Best of references. Correspondence solicited. Address "Salesman," care of "The Brickbuilder."

Architectural Faience. Competition B.*Subject: A Large Mantel with Hood.*

ONE CASH PRIZE ONLY. FIFTY DOLLARS FOR BEST DESIGN. ALSO MENTIONS.

Competition closes December 1, 1905.

PROGRAMME.

At the end of a large hall, such as would occur in a clubhouse or in the main lobby or dining-room of a hotel, it is desired to place a large mantel with a hood, similar in style to that of the period of Francis I of France. This mantel should be designed to be executed in Architectural Faience in one or more colors.

The color scheme may be indicated by a key.

The mantel is to occupy a wall space of not more than 150 square feet.

Drawings required. Plan and elevation at a scale of one-half inch to the foot.

Drawings may be rendered at will on a sheet of unmounted white paper, measuring 16 inches by 20 inches.

Each drawing is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with a *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawing is to be delivered at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 1, 1905.

The prize drawing is to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names five cents in stamps.

The designs will be judged by a well-known member of the architectural profession.

Competition open to every one.

Competition for an Office Building

First Prize, \$500 Second Prize, \$200 Third Prize, \$100

COMPETITION CLOSSES DECEMBER 23, 1905

PROGRAMME



HE problem is an Office Building. The location may be assumed in any city of the United States. The site is at the corner of two streets of equal importance. The lot itself is perfectly level. The size of building is 80 feet square on the ground and 120 feet high. Number of stories left to the designer.

Above a base course of granite (not over 2 feet high) the exterior of the building is to be designed entirely in Architectural Terra Cotta.

For the reason that colored terra cotta is likely to be used extensively in the facades of buildings, it is desired that a color scheme shall be indicated either by a key or a series of notes, printed in the lower right-hand corner of the sheet of details at a size which will permit of two-thirds reduction.

The following points must be considered in the design:

A. Frank and logical expression of the prescribed material.

B. Rational and logical treatment of the architectural problem.

In awarding the prizes the intelligence shown in the constructive use of terra cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra cotta. There is no limitation of cost, but the designs must be suitable for the character of the building and for the material in which it is to be executed.

The details should indicate in a general manner the jointing of the terra cotta and the sizes of the blocks.

Drawings Required

On one sheet the front elevation drawn at a scale of 4 feet to the inch, and on the same sheet the perpendicular section of the front wall.

On a second sheet, half-inch scale elevations and sections of main entrance and any other portions of the building necessary to interpret the design, including a portion of upper stories and main cornice.

In the lower left-hand corner of the second sheet is to be shown the first and typical floor plans at a scale of 16 feet to the inch. The first floor plan may provide offices for a bank or insurance company. The main entrance corridor and location of the elevators should also be shown.

The size of each sheet (there are to be but two) shall be 24 inches by 36 inches.

The sheets are not to be mounted.

All drawings are to be in black ink without wash or color, except that the walls on the plans and in the sections may be blacked-in or cross-hatched.

Graphic scales to be on all drawings.

Every set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 23, 1905.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

The designs will be judged by three well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of \$500.

For the design placed second a prize of \$200.

For the design placed third a prize of \$100.

We are enabled to offer prizes of the above-mentioned amounts largely through the liberality of the terra cotta manufacturers who are represented in the advertising columns of THE BRICKBUILDER.

This competition is open to every one.

THE BRICKBUILDER.

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NOVEMBER 1905

No. 11

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& SAWYER, HORACE TRUMBAUER, WARREN, SMITH & BISCOE,
WILKINSON & MAGONIGLE.

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CLOISTER OF CHURCH OF SAN DOMINGO, SALAMANCA, SPAIN.



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THE DUTY OF EVERY ARCHITECT.

AT no time in the history of American architectural effort has there been such an imperative call to architects for union of effort, for a development of true *esprit de corps*, as at present. As the burdens laid upon the profession have increased, as its duties have multiplied and broadened, as more has been demanded of the architect, the greater has been the need for the kind of professional solidarity which has obtained for so many years in the professions of law and medicine. The architect and his work are beginning to be known and appreciated as never before, and it is no longer the case of every man for himself, but there is every evidence to show that architects are expected to pull together, to have common and high professional aims and to be true to their principles.

The remarkable dinner given by the American Institute of Architects at its convention last January brought the profession very prominently and we think very successfully to the immediate attention of those who are most interested in the actual provision for large public buildings, namely, our legislators and political executives. The dinner called together the leading spirits in politics, art, literature and religion, as well as those who, by reason of their large means and public spirit, have become known as public benefactors. The architectural profession, we have no doubt, was by this dinner placed in a new light in the eyes of many of our leaders, who perhaps had previously regarded architects and architecture as only a little removed from the position of a builder and his trade.

There is undoubtedly an aroused interest in architecture as a monumental art. It would be almost impos-

sible for Washington now to go back to the style of work which was the rule not so very long ago; and even those representatives of the people who have been most suspicious of appropriations for public buildings are showing now a disposition to recognize the importance of architecture as a fine art in its relation to our national development, and are willing to accord the architect a greater latitude and a greater respect for his opinions than before. This has come about, we believe, very largely through the efforts of the American Institute of Architects, and we can not too strongly urge the duty and obligation upon all architects who have the welfare of their art at heart of becoming identified with the prime factor which is doing so much to increase the dignity and the effectiveness of the profession.

If architecture is to be in this country what it has been and is now abroad, there must be concerted interests and a unanimity of aim. The public is ready for it, for not only the forces at Washington who were appealed to so strongly at the last dinner, but the leaders throughout all our large cities have awakened to what architecture can be. The conservatism which seems to be so inborn in the profession makes it at times hard for the architect to get out of his shell, to surrender a certain portion of his individuality and to merge into the work of the country as a whole; but this involves no real surrender, but rather an assumption and claiming of what really will make for the best development.

The light of the profession is set on a hill. The public expects architects to write the national history in characters and a style of which no one need be ashamed. We have the talent, the opportunities are being presented on every hand; now it is for the profession to meet them, and meet them in such way that there need be no fear for the results.

Our monumental architecture is just beginning. The development of the country thus far has been most pronouncedly on the commercial side, but with the enormous accumulation of wealth, the dissemination of real culture and appreciation, the twentieth century is bound to be marked by a wealth of monumental architecture, and for the possibilities of such growth the American Institute of Architects is undoubtedly to be credited with the greatest influence.

At its convention in January the Institute will have a dinner on the order of the one which was so successful last year, and the greatest interest will be manifested in its proceedings.

Modern Catholic Church Work in England. I.

BY R. RANDAL PHILLIPS.

ALTHOUGH church planning does not involve so many complexities as obtain in large commercial and municipal buildings, nevertheless, by reason of the inflexible nature of the Roman Catholic ritual, the architect becomes much restricted in his internal arrangements, more especially in those cases where he has been required to produce a church after the model of some old example; yet, on the other hand, in the matter of impressive effect and the rich decoration of the interior, he finds in Roman Catholicism every possible incentive.

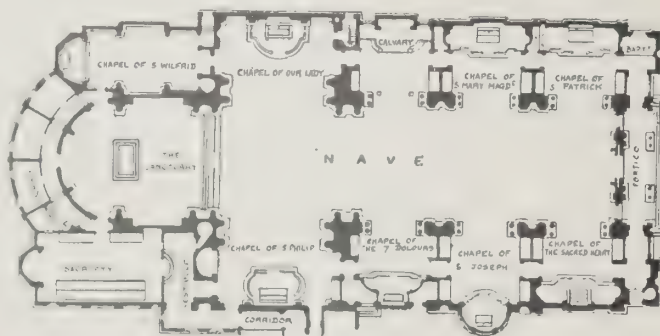
In England to-day the architects of any account who are intrusted with the work of the Roman Catholic Church hardly number a dozen. Ireland of course is largely a Roman Catholic country, requiring so many more churches, but the bulk of the work done there is altogether lacking in architectural quality, and may therefore be dismissed from present consideration.

In this article a sharp distinction is made between the work done for the Roman Catholics and that of the High Anglican section of the Church of England, not because there is any such distinct difference between the two in actuality, but for the reason that otherwise one would be drawn into so vast a field as to be quite out of compass here; and, secondly, the writer has confined himself to the period of the last twenty-five years, deeming that to be ample interpretation of the term "modern."

It so happens that the very beginning of the period in question is marked by an important building—the Oratory of St. Philip Neri at Brompton—which serves as an admirable starting point. The building was erected during the years 1880–1884 as the outcome of a



BROMPTON OBATORY. H. A. Gribble, Architect.



PLAN, BROMPTON ORATORY.



INTERIOR, BROMPTON ORATORY.

competition in which there were two-and-twenty competitors, the successful architect being Mr. Herbert A. Gribble. The conditions stipulated that the church was to be of Renaissance style, and that space was to be

found for no fewer than nine side altars and twenty confessionals. Under such conditions it is only to be expected that the plan and interior treatment are derived bodily from the Italian churches. The plan comprises a wide nave with chapels on either side, two shallow transepts having a large altar in each, and a sanctuary beyond with ambulatory, chapel and sacristies. The chapels

on either side of the nave are 30 feet square and are connected together by openings sufficiently large for processional purposes. The nave is 170 feet long and 51 feet wide, ten feet wider than St. Paul's and fifteen feet wider than Westminster Abbey, and is vaulted over in Portland cement concrete (in the proportion of ten parts of Portland stone chippings of three-quarters inch gauge to two parts of Portland cement). The order is carried at a height of 50 feet on twin Corinthian pilasters of Devonshire marble. Over the crossing is the dome, which gives the building its chief character. This is of 53 feet internal diameter, and is of double construction, the dome proper being of concrete two feet thick at the haunches, and gradually diminishing to one foot at the eye (which is of stone), while the outer shell has a steel framework with wood ribs covered with sixty tons of lead of the finest quality. The height from the ground line to the summit of the cross is 200 feet. The lantern, including the ball and cross, is 47 feet high and the cross itself 6 feet. It should be stated that on the death of the original designer the outer dome was carried out (in 1896) to the drawings of Mr. G. Sherrin. Its general outline most resembles SS. Ambrogio and Carlo at Rome.

Both externally and internally the oratory exhibits



CHURCH OF OUR LADY OF THE ASSUMPTION AND THE ENGLISH MARTYRS, CAMBRIDGE.
Dunn & Hansom, Architects.



INTERIOR, CAMBRIDGE CHURCH.
Dunn & Hansom, Architects.



INTERIOR, CHURCH OF OUR LADY, BOW COMMON.
F. A. Walters, Architect.

the customary treatments to be found in the Renaissance style, with the exception of the dome. The main front suffers from the pedestals which overload the pediment, and exception may be taken to some of the detail,—as in the caps to the nave pilasters and the framing to the altar-piece,—but it must be admitted that the architect made good use of his models and secured a feeling of bigness in the interior.

In 1887-1890 the very large Church of Our Lady of the Assumption and the English Martyrs was erected at Cambridge at a cost of \$350,000. The architects were Messrs. Dunn and Hansom, who have designed many churches in different parts of the country, such as that at West Hartlepool, of which a plan is here given as a matter of interest. The Cambridge church is in the Early Decorated style, and consists of nave, chancel, aisles and ante-chapel, with a short tower over the crossing and a massive tower on the north side with spire reaching to 215 feet. Attached to the church is a rectory arranged as an open quadrangle. The building provides sittings for 800 persons, and the interior is particularly noteworthy for the painting on the wall above the chancel arch. This is strongly lighted through the windows in the tower over the crossing and has a striking effect. The elaborate vaulting is also a feature of the interior. The architects, it is evident, have followed closely in the wake of the Gothic imitators, but they have executed their work very skillfully and secured a feeling of height. So far as detail is concerned, the north door is excellent. The design exhibits nothing alarmingly fresh or clever, but the result is undoubtedly successful. There is good proportion in every part of this doorway, and the exuberant detail in crockets, cusps and paneling at once claims attention.

Mr. F. A. Walters is an architect who has done a great deal of very delightful work for the Roman Catholic Church in England. He is here represented by a number of illustrations, all exhibiting much refinement in general feeling and variety in treatment. Let the churches at Bow Common and Mile End Road—in different parts of London—be compared, for example. At Bow Common (1893) special attention is directed to the grille dividing off the chancel. The detail of this is very graceful and vigorous. The rood, too, is finely treated, where it is carried on a beam decorated in color. Of the other churches by Mr. Walters it will suffice to note how uniformly pleasing they are. The convent which he designed for the Gray Friars at Chilworth, Surrey, is particularly successful in its exterior.

With the exception of the chapel, the whole of the buildings of St. Mary's College, Woolhampton, Berks, have been erected since 1885, the latest portions, shown in the accompanying illustration, having been completed in 1895. The college was erected for Catholic educational purposes, and was intended for the reception of boys proposing to follow an ecclesiastical or professional career. The buildings provide accommodation for about one hundred and fifty students, together with the requisite number of professors, and in addition there is a domestic block (to the right) occupied by the matron and servants. The college cost \$90,000.

Another Catholic church architect who has done a great deal of excellent work is Mr. Goldie. One of

his most important designs is that of St. James', Spanish Place, London (no view of which is included in this article, because permission to sketch or photograph is never granted), but some of his other work is perhaps more interesting—the convent at Hayward's Heath, for instance.

Hawkesyard Priory Church, Staffordshire, is Late Perpendicular in style. It is a collegiate church 120 feet long and 30 feet wide, carried out in brick, with an open hammer-beam roof covered by green slates. The interior is divided into nine bays, with three-light traceried and mullioned windows at the sides and a seven-light window at the west end. At the east end the second and third bays on the south side open into the organ tribune, and in the last bay but one on either side at the west end there are openings into two side chapels, one of which has stone fan vaulting. The nave occupies the four western bays, the three next being devoted to the choir, which is raised three steps above the nave. There are two rows of eleven oak stalls each on either side, canopied, with return oak screens at the entrance to the choir, against which are two small stone altars and reredoses towards the nave. Beyond the choir, and raised another three steps, is the sanctuary, in two eastern bays. This has a beautiful stone reredos the whole width of the church and 30 feet high, with forty-two figures, the space above being frescoed.

Among other churches by Mr. Goldie are St. Alban's, Blackburn, and churches at Wood Green, Acton, and St. Mary Cray. St. Alban's, Blackburn, accommodates one thousand persons. The little country church at St. Mary Cray in Kent consists of a single nave and chancel. The church of St. Paul, Wood Green, is a cheap church, such as is described as a modern invention, being well built though plain, and making the most of limited funds. The plan needs no comment, being perfectly simple and uniform. That of Our Lady of Lourdes at Acton, however, is very ingeniously contrived.

The Church of St. Ignatius at Stamford Hill, London, is at present only half finished. The west front has yet to be erected, as well as a large college adjoining. Mr. Benedict Williamson, the architect, has endeavored to deal with modern needs and modern materials in the way the mediæval master builder would have done, and to follow the lines laid down at Solesmes. Proportion, boldness of outline and unity of parts have been the chief things aimed at. The arches are all square cut, with no molding to detract from the depth of shadow, while in order to increase the feeling of height the string moldings are stopped against the buttresses, which rise with narrow offsets. In plan the church is cruciform. The total width of nave and aisle is 62 feet, the height to the crown of the nave vault being 54 feet and to the roof ridge 66 feet. The piers supporting the nave arcade are square, with three-quarter shafts. The interior of the church is plastered and the vaults are boarded over. The aisles are divided by arches, in the pilasters supporting which the stations of the Cross are being placed in glass mosaic. The two towers flanking the central portion of the west front will not have portals, as at Amiens, the three doorways being placed centrally, as at Chartres. These towers, though similar in outline, will vary considerably in detail. An interesting feature of the plan is



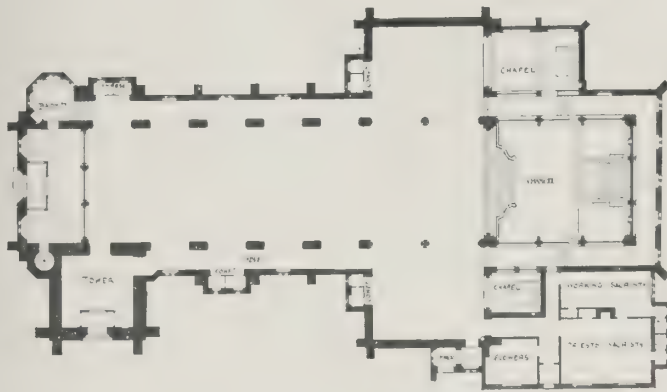
CHAPEL, CHILWORTH, SURREY.
F. A. Walters, Architect.



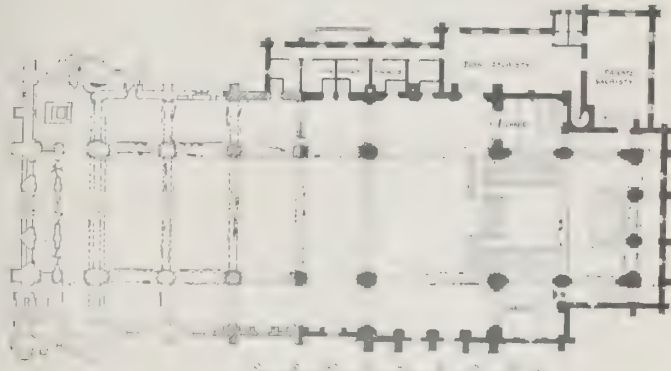
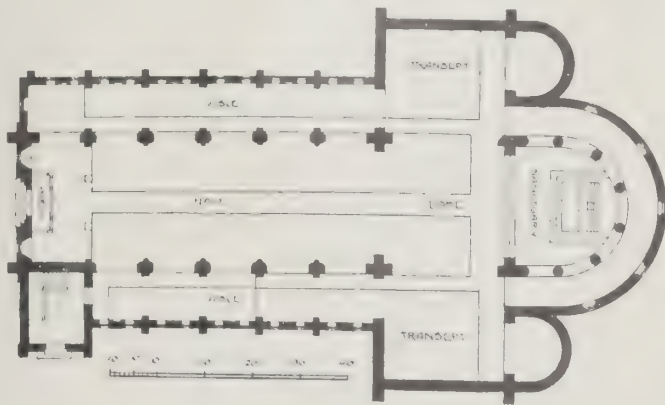
CHURCH OF THE GUARDIAN ANGELS, MILE END ROAD, LONDON.
F. A. Walters, Architect.



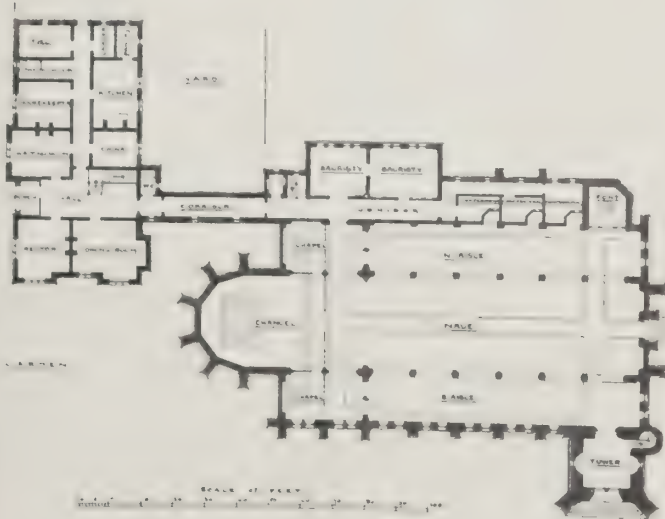
THE CHANCEL, HAWKESYARD PRIORY, STAFFORDSHIRE.
E. Goldie, Architect.



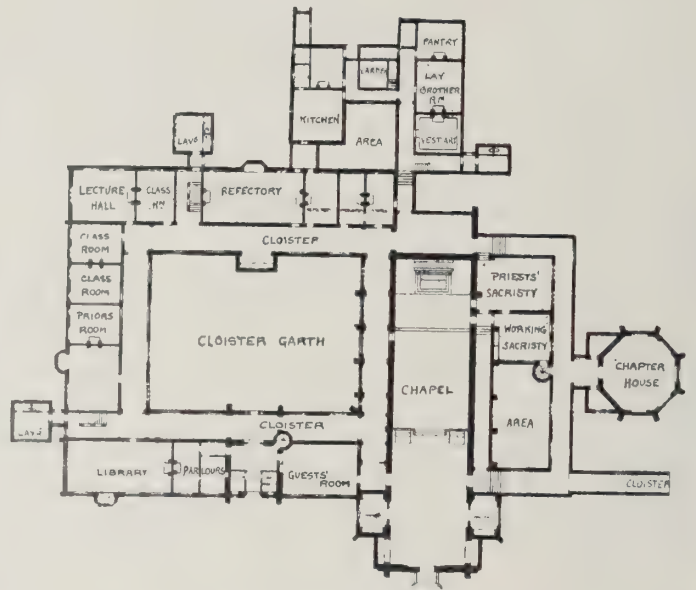
PLAN, ST. ALBAN'S, BLACKBURN.

PLAN, ST. IGNATIUS, STAMFORD HILL.
(Part to be erected shown in outline)

PLAN, ST. PAUL'S, WOOD GREEN, LONDON.



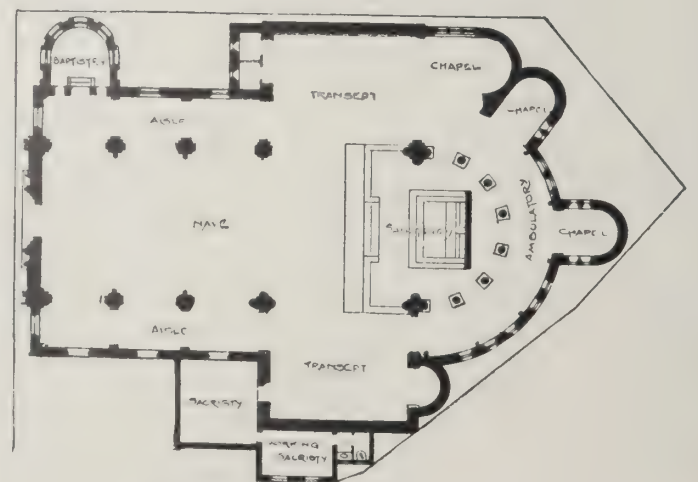
PLAN OF ST. JOSEPH'S, WEST HARTLEPOOL.



PLAN OF CONVENT, HAYWARD'S HEATH.



PLAN, MONASTERY, CHILWORTH.



PLAN, CHURCH OF OUR LADY OF LOURDES, ACTON.



MONASTERY OF THE GRAY FRIARS, CHILWORTH, SURREY.
F. A. Walters, Architect.



PRIORY OF OUR LADY, HAYWARDS HEATH, SUSSEX.
E. Goldie, Architect.



ST. MARY'S COLLEGE, WOOLHAMPTON, BERKS.
F. A. Walters, Architect.



CHURCH AT ST. MARY CRAY, KENT.
E. Goldie, Architect.

the arrangement of the confessionals, which do not project into the church but are enclosed by a low block which expresses itself on the exterior. It will be observed that the priests enter the confessional by a



PORTION OF ST. IGNATIUS CHURCH.

corridor at the back leading from the sacristy. The floor of the church is of terrazzo with a pleasing pattern of black and white marble on the passageways. An interesting fact in connection with the building is that it is built with two-inch bricks brought from Bruges, the dressings to windows and doors being of Kentish rag stone.

The Church of St. Augustine at Nottingham is to be erected from the designs of Mr. Arthur Marshall,



CHURCH OF ST. AUGUSTINE, NOTTINGHAM.
Arthur Marshall, Architect.

A. R. I. B. A. The general arrangement is shown by the plan, but it may be mentioned that the rapid fall of the street lends itself to the provision of the necessary vestries under the chancel.

The Work of the Boston Schoolhouse Commission, 1901-1905. II.

STANDARDS OF SIZE AND COST.

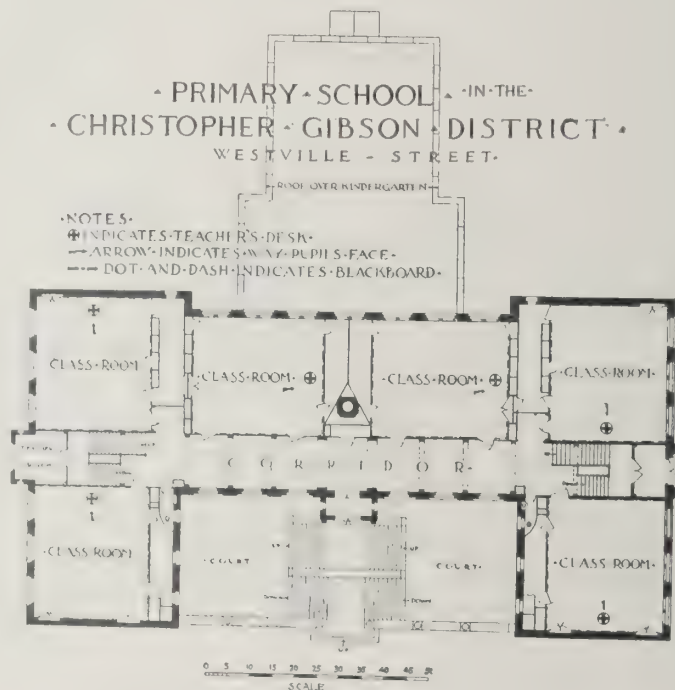
DURING the first two years of the Board's work carefully compiled data relating to the schools built by them established what seemed to be fair limits of area, cube and cost for different types of buildings. These were noted at the end of article I and are repeated here in tabular form that they may be held clearly in mind, while we compare the various buildings and see how they agree with or vary from these limits.

PRIMARY SCHOOLS.

No. of rooms.	Cu. ft per classroom.	Cost per cu. ft.	Cost per pupil.
Over 14	30,000	\$0.22	\$132.00
Under 14	35,000	.22	154.00

GRAMMAR SCHOOLS.

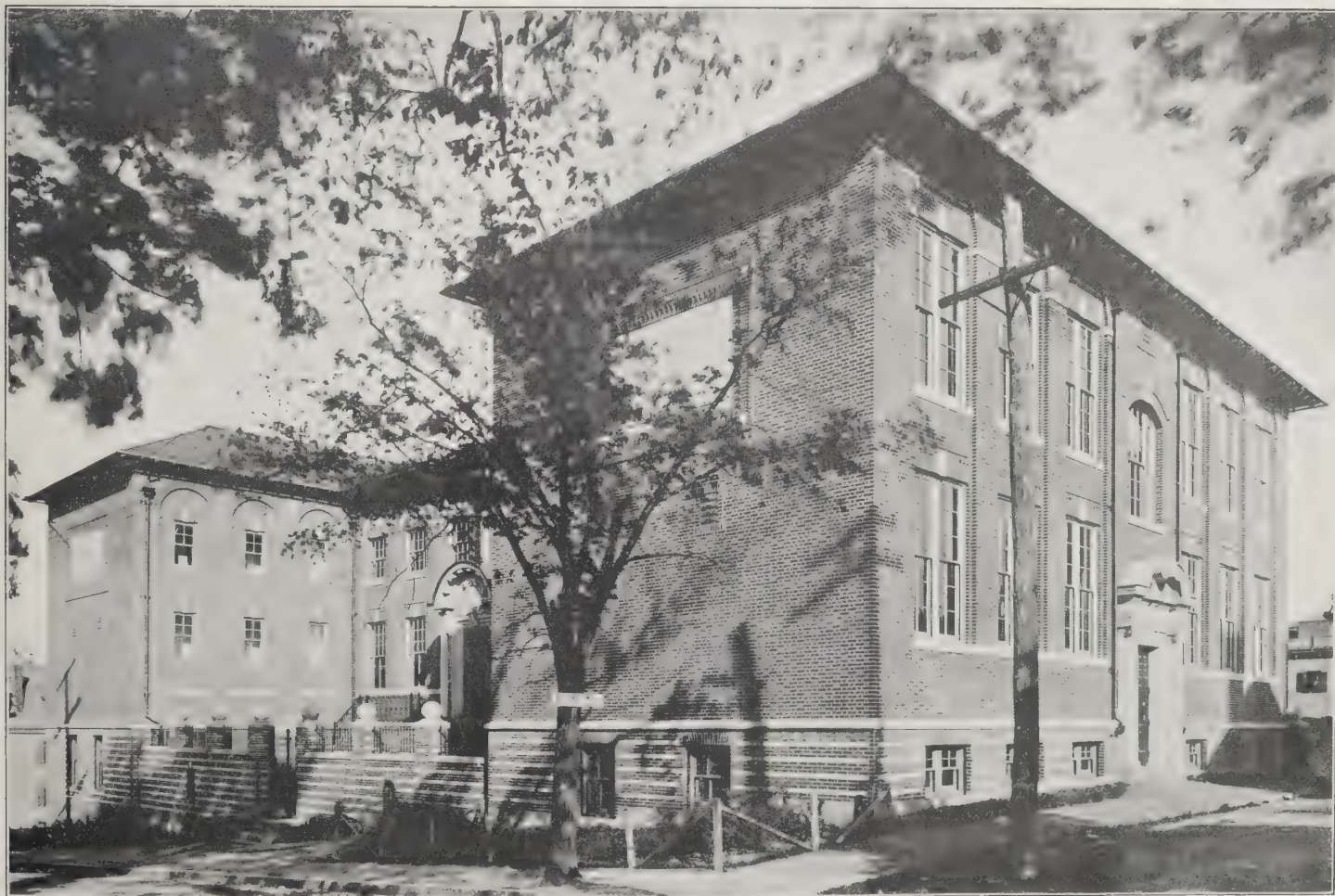
Over 18	40,000	\$0.22	\$176.00
Under 18	45,000	.22	198.00



FIRST FLOOR PLAN, MARSHALL SCHOOL.

In both grades it was established during the first year of the Board's existence that an economical plan would show a total area of one floor not exceeding twice the area of the classrooms (measured inside) on that floor. It is natural that in a building with few classrooms the cubical contents per room should be greater than in a building where the somewhat constant cube necessary for the domestic engineering and utilities is divided among a large number of classrooms, and it has been always the experience of the Board that it was more difficult to keep the smaller buildings down to the standard limits of cost set by them than the larger ones. In certain cases, owing to special conditions of site, design or other causes, a building which showed an economical plan and cube has overrun the limit of cost, while on the other hand some buildings which were for one reason or another above the limit set for cube have been built for

NOTE.—The figures in parentheses, given in connection with the titles, are limits set by the Board.



THE MARSHALL SCHOOL.

Primary, Christopher Gibson District, Westville Street and Bowdoin Square.

Maginnis, Walsh & Sullivan, Architects.

14 rooms; 700 pupils.

(Kindergarten in addition.)

Cube, 516,624 (490,000). Cost, cubic foot, \$0.24 (\$0.22).

Cost, \$124,467.65 (\$107,800). Cost per pupil, \$177.81 (\$154.00).

less than the limit of cost; but in general the standards above mentioned, given roughly in the second report (January 31, 1903-February 1, 1904), and more definitely in the third report, have been fairly proved by the schools built up to the present time.

Of the eight primary schools which will be illustrated in this and subsequent papers in this series two, the Whittier and Tuckerman schools, are ten-room buildings, the Ellis Mendell is a twelve-room, the Marshall, Farragut and Mason schools are fourteen-room and the Columbus and Baker schools are twenty-four room buildings. Of the two ten-room buildings both were well under the limits of area and cube, but the one showing the lowest cube (the Tuckerman) cost just over the limit (\$77,065.90), while the other, being built for the standard cost per cubic foot (twenty-two cents), was well under the limit of total cost (\$77,000), being built for \$72,269.70.

The twelve-room building proved expensive owing to variations from the standard type, which increased the cube and cost.

Of the three fourteen-room buildings, the Marshall and Farragut schools were built in 1902 and 1903, the Mason School in 1904-05. The first (the Marshall), a two-story building though rated as a fourteen-room building, has a one-story addition of three rooms for kindergarten, which was responsible for an excessive cost on a fourteen-room basis. If these extra rooms were counted the building would fairly approximate the standard. The Farragut School, owing to great extent to a single unit plan, in which the corridor serves classrooms on one side only, shows an excessive cube and cost. The plan is an unconventional one, determined by a great many considerations, but one which the Board considers it



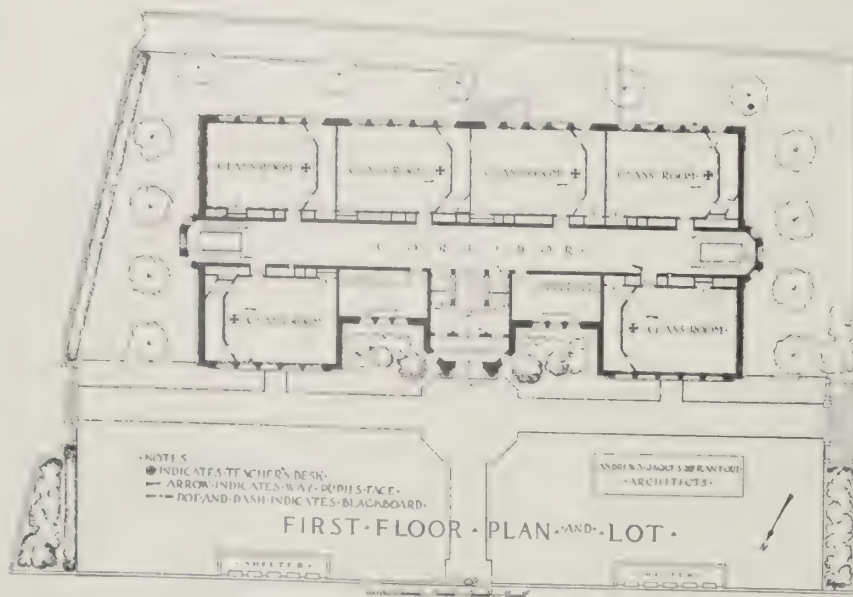
DETAIL OF ENTRANCE, ELLIS MENDELL SCHOOL.

School, shows an economical plan, a cube (708,607) well under the low limit of 720,000 cubic feet, and is being built for \$157,161.93, the low limit of cost being \$158,400.

The six grammar schools to be illustrated in these articles vary in size from fourteen rooms to thirty-one rooms, one intended for a twenty-six room building is being only partly constructed at present as a fourteen-room school.

The Perry School, a fourteen-room building, shows an economical area and cube, but owing to the grading of a lot large enough, as in the case of the Mason Primary School, to take a future building, the total cost was forced above the limit of \$138,600, it being built for \$145,633.23.

The Gardner School, which when completed will be a twenty-six room building, has been built in part and at present rates as a fourteen-room building. The corridors, assembly hall and heating apparatus being installed for a twenty-six room building makes a comparison of this building with a fourteen-room standard unfavorable, and in spite of the fact that its first construc-



GROUND FLOOR PLAN, MENDELL SCHOOL.

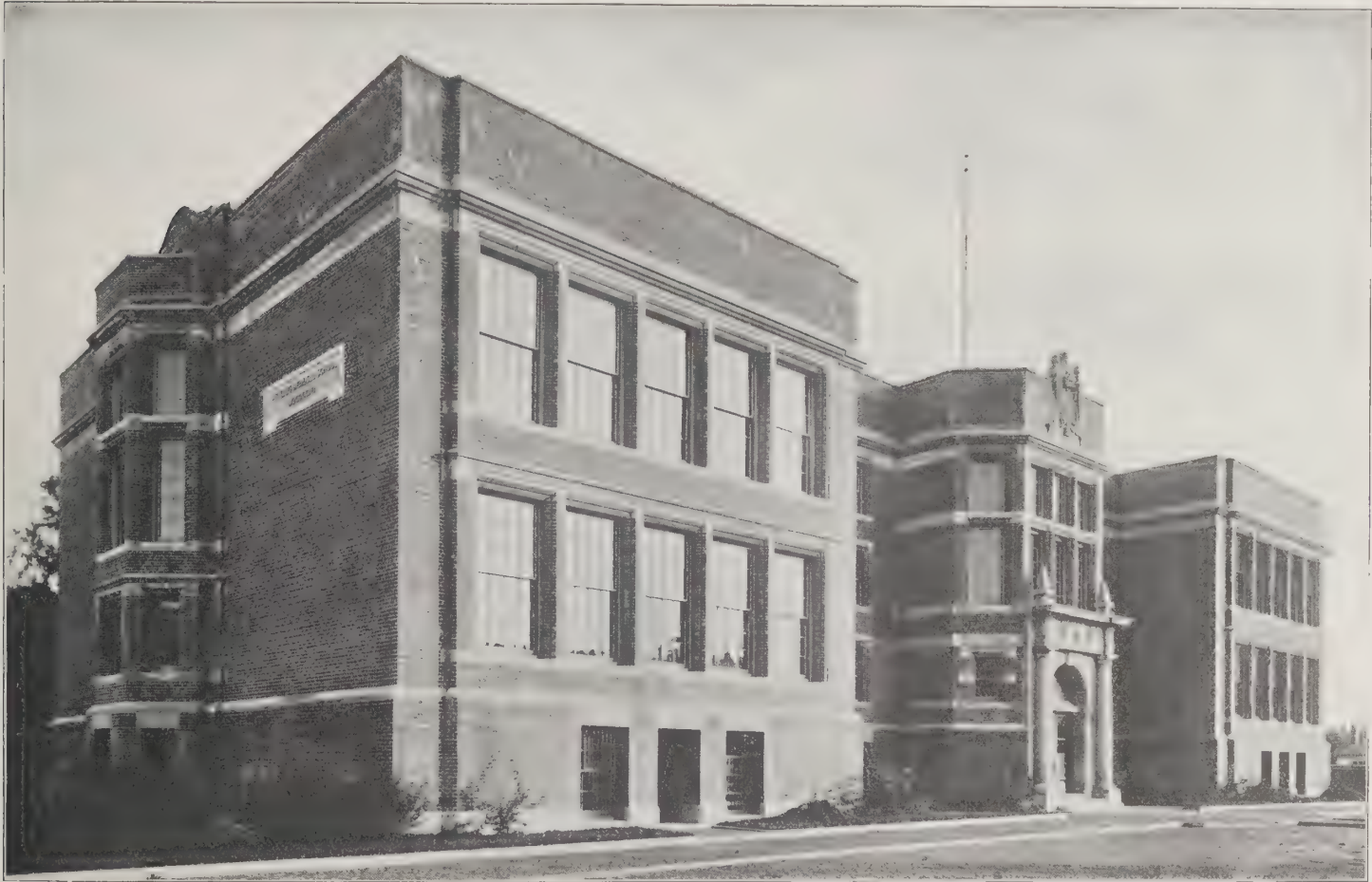
tion was at a rate of nineteen cents per cubic foot, below the standard, its total cost is \$142,718.37, the standard limit for fourteen rooms being \$138,600. When completed as a twenty-six room school it should prove an economical building.

The Jefferson School, nineteen rooms, the first of these grammar schools to be built, proved a very expensive building. A great deal of blasting was necessary, and this, together with considerable glass and iron exterior wall construction and a somewhat excessive corridor area, contributed to its higher cost. The high limit for this school should have been \$180,000, but it cost \$210,890.49.

The Dearborn School, twenty-one rooms, not yet com-

of while school was going on in the old buildings on the lot. Even with this addition the total would appear to be not over \$195,000, the low limit set by the Board being \$201,200.

The largest school built by the Board is the Mather School on Meeting House Hill, which has thirty-one classrooms, with an accommodation of fifteen hundred and fifty children. The area shows economical planning according to the standard, but the cube is somewhat excessive, being 1,353,831 cubic feet, the low limit being 1,240,000 cubic feet. The cost was \$288,380.46, the low limit being \$272,800. Blasting, which extended over a period of five months, and a rather larger amount of stonework than usual contributed to this excess. There is in the



THE ELLIS MENDELL SCHOOL.

Primary, George Putman District, School Street, West Roxbury.
Andrews, Jaques & Rantoul, Architects

Cube, 517,035 cubic feet (420,000).
Cost, \$122,267.20 (\$92,400).

Cost cubic foot, \$0.236 (\$0.22).
Cost per pupil, \$203.78 (\$154).

pleted, shows an economical plan, but it is intended for a thirty-three room building, and the assembly hall and other features, as in the Gardner School, planned for a larger building, make it show large cube and cost on a twenty-one room basis. It will cost \$211,308, the low limit for a twenty-one room school being \$184,800. When completed it should approximate the standard.

The Oliver Wendell Holmes School, twenty-four rooms, is the most economical grammar school built by the Board. The area is just under the standard proportional limit. Its cube is somewhat in excess of the limit, but it was built at the rate of nineteen cents per cubic foot for a total of \$188,326.47. This does not include the entire grading, which could not very well be taken care

of in a future possibility of four more classrooms. If these were completed for \$12,000, as noted in the last report, the school would rate as a thirty-five room building, with a cost of approximately \$300,000. The low limit of cost for thirty-five rooms would be \$308,000, so that with these extra rooms the building would show a very good economy.

In figuring the cost per pupil the Board takes a unit of fifty pupils to a room. A standard room seats fifty-six, but in many of the large schools there are ungraded and other classes which are even below fifty, and this figure is taken as a fair average. In all cases the cost includes the complete building, with all trades, and all the grading, draining, paving and planting of grounds, in some cases

covering a considerable area. No attempt has been made to separate the cost of the grounds from the cost of the building. In most of the buildings the contracts are divided, and under these circumstances a forfeiture contract is difficult to enforce, and therefore generally unadvisable. In some cases there is a single contract with a forfeiture and bonus clause. In view of the urgent need of new schools the Commissioners have no hesitation in saying that it would be to the advantage of the city if all their contracts were on this basis. A single contractor assumes responsibility for all the trades, and exceptional ability or diligence on his part will earn him a bonus which it is well worth while for the city to pay.

Before considering in detail the plans of the four primary schools illustrated in this number it would be well to mention briefly some of the principles of arrangement approved by the Board.

The accepted theory that two exits are necessary from each room is disregarded, as is the "by-pass" communication from room to room which is so strongly insisted upon by the Massachusetts district police. The Board takes the ground that in the event of fire or panic it is better to have the children trained to go to a well known route of escape rather than to run the risk of having them scatter through the building, using various little known doors and passages. It must be remembered in this connection that the Boston schoolhouses are of fireproof construction. Examination of several plans will also

show that it is not considered necessary to keep the main staircases widely separated, and that corridors with "dead ends" are not thought to be a menace to safety. How far the Board may be right in this supposition has yet to appear. It is well known that panic may result from smoke in a fireproof building, and in case of the choking of one staircase by smoke, a by-pass through the building to another distant one might be of incalculable use, and under present day discipline it should not be difficult to conduct the children thither.

The wardrobes adjoin, and are entered from the classrooms. When possible they are placed at the end of the classrooms nearest the corridor door and the teacher's desk, so that the pupils will not have to traverse the classroom to reach them, and so that the teacher may have easier control; but this is not considered essential by any means, as several buildings have the wardrobe at the farther end of the classroom. Security of the clothing and other effects of the children is the main object attained by this arrangement. Each wardrobe has an outside window and two doors to the classroom to facilitate filing the children.

Exclusive left-hand lighting of classrooms is gener-

ally practised, though not theoretically insisted upon. The Board believe that economy of construction would suggest brick piers between the windows, so spaced as to receive the steel beams, thus avoiding the expense of iron columns, mullions and lintels. The ends of the corner rooms are kept blank and given such architectural treatment as the architects think best. The general policy of the Board is so to arrange the rooms that all shall have direct sunlight during some part of the day.

Electric lighting of classrooms is arranged to give reflected light from the ceiling, which the Commissioners find gives the most equable light and the least trying to the eyes. The engineers of the Board have devised a special fixture which produces good results.

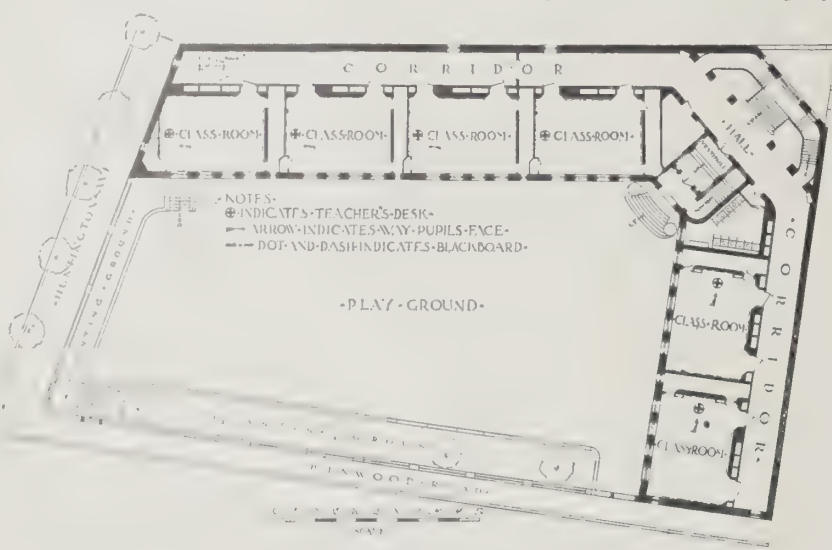
The Board now direct that the toilets shall be grouped in the basement. In one school (the Ellis Mendell) the experiment was tried of separating them on the different floors, but this was found to be expensive and undesirable. The heating apparatus is in the basement, except in special cases where it is put in a sub-basement to free up the basement for playrooms, etc.

In grammar schools the manual training and cooking rooms are in the basement, but they are expected to have as good light as any ordinary classroom, and if in a corner may be lighted from two sides.

THE MARSHALL SCHOOL.

This is a primary school with a one-story addition, containing three rooms for kindergarten. The land slopes sharply to

the east, so that the basement to the south and east is above ground, giving available space for two more classrooms when needed. It is of a conventional type, with two wings extending to the lot line on Westville Street. The court enclosed between the wings is used merely for the steps down to the street, with grass plats beside, the girls' and boys' yards being behind the building and forming an open space, which insures permanent light on the only side of the lot adjoining private property. The basement contains the toilets, the playrooms, the space available for extra classrooms being utilized for additional playrooms and the boiler and coal storage. Each of the floors above has six classrooms. While the main entrance is in the Westville Street court, there are entrances at each stairway at the ends of the corridor. With the exception of the roof frame the construction is first class throughout. The building is heated by steam with gravity return. The ventilating system is also gravity, with a small fan for the kindergarten on account of its low grade. As in all other schools built by the Board this building is wired for electric light, the classrooms being lit by reflected light from the ceiling, as noted above. There is also a system of



GROUND FLOOR PLAN, FARRAGUT SCHOOL.

electric clocks and bells. In computing the standard cube and cost the two unfinished rooms in the basement are taken into account, and the building is rated as a fourteen-room building. The excess is due to the kindergarten addition.

THE FARRAGUT SCHOOL.

In this school the architects worked on the theory that sun should be excluded from classrooms for the benefit of the eyes. This fact, together with the noise of Huntington Avenue, led them to place the corridor on the two party lines, with the classrooms opening off on only one side and getting ample light across the enclosed playground. This sacrificed some light in the corridors and increased the cube of the building considerably, a fact which was largely responsible for the great cost. The

water. The air forced over this pan by the fan carried the vapor with it to the rooms. Registering instruments showed thirty per cent to fifty per cent of moisture in this wing, while in the other wing, supplied with air without additional moisture, there was but fifteen per cent to thirty per cent. The natural percentage in summer is sixty-five per cent to seventy per cent. This can be obtained artificially, but in cold weather, if the air is more moist than fifty per cent, the windows may be seriously clouded with vapor.

While the engineers are unable yet to report definite data as to the effect on the building, furniture and pupils and teachers, they observed that a somewhat lower temperature was sufficient in the rooms artificially moistened than in the others, and suggest the indication of a possible saving in fuel.



THE FARRAGUT SCHOOL.

Primary, Martin District, Huntington Avenue and Kenwood Road.
Wheelwright & Haven, Architects.

14 rooms; 700 pupils.

Cube, 652,630 (490,000).	Cost cubic foot, \$0.23 (\$0.22).
Cost, \$150,526.43 (\$107,800).	Cost per pupil, \$215 04 (\$154).

Board now believes that each classroom should have some sun. The basement contains the toilets, small playrooms and a manual training room and cooking school, unusual features in a primary school. The building is therefore considered as a fourteen-room building for comparison with standards, each of the floors above having six rooms. The heating system is low-pressure gravity return. The air is handled by means of a fan, run by an electric motor owing to restrictions of space, with primary and supplementary radiators automatically controlled.

A test of moistening apparatus was made in this building. The main air duct, after leaving the fan, branches to right and left, a branch furnishing the air for each wing. In one branch a shallow pan of water was placed, with submerged brass steam pipes, which when the steam was turned on caused vapor to rise from the

THE ELLIS MENDELL SCHOOL.

This school, like the Farragut, has some variations from the conventional plan for the sake of experiment. Instead of being collected in the basement, the toilets are separated and placed on each floor. At either side of the entrance and central stairway the height of the two schoolroom floors is divided into three stories, the upper and lower being used for toilets, the upper being slightly above the level of the second-floor classrooms, while the middle story is used for the teachers' room and storeroom. There are also toilets in the basement, together with the playrooms and heating apparatus. There are two direct entrances to the basement from the playgrounds, which here are not enclosed, but accessible always from a foot-path connecting Boylston Place and School Street. These open playgrounds are again an experiment, and it remains



THE SAMUEL W. MASON SCHOOL.

Primary, Hugh O'Brien District, Roxbury, Norfolk Avenue and Clayton Place.

John A. Fox, Architect.

Cube, 438,223 (490,000).

Cost cubic foot \$0.27 (\$0.22).

Cost, \$118,851 (\$107,800).

Cost per pupil, \$169.79 (\$154).

to be seen whether the city's property will suffer or whether, under proper restrictions, this open space proves the benefit to its neighborhood that might well be expected of it. In connection with these yards the basement of the school, with the playrooms, and even the toilets adjoining, can be left open to the children without giving access to the rest of the building.

The distributed toilets and the third staircase proved expensive features, and the Board have decided not to repeat them.

As to the classrooms, this building conforms to the ideals of the Board, each classroom being arranged so as to have some sun each day, with its wardrobe at the teacher's end of the room, thus giving the greatest control.

The building is fireproof throughout, with gravity system for heating and ventilating governed by hand controls in each classroom, and furnished with electric light and the usual programme clocks and bells.

The excess in cost is due to the unusual features mentioned and to some extra expense for gates, shelters and drinking fountain which the Board considered was justified by the public nature of the playground.

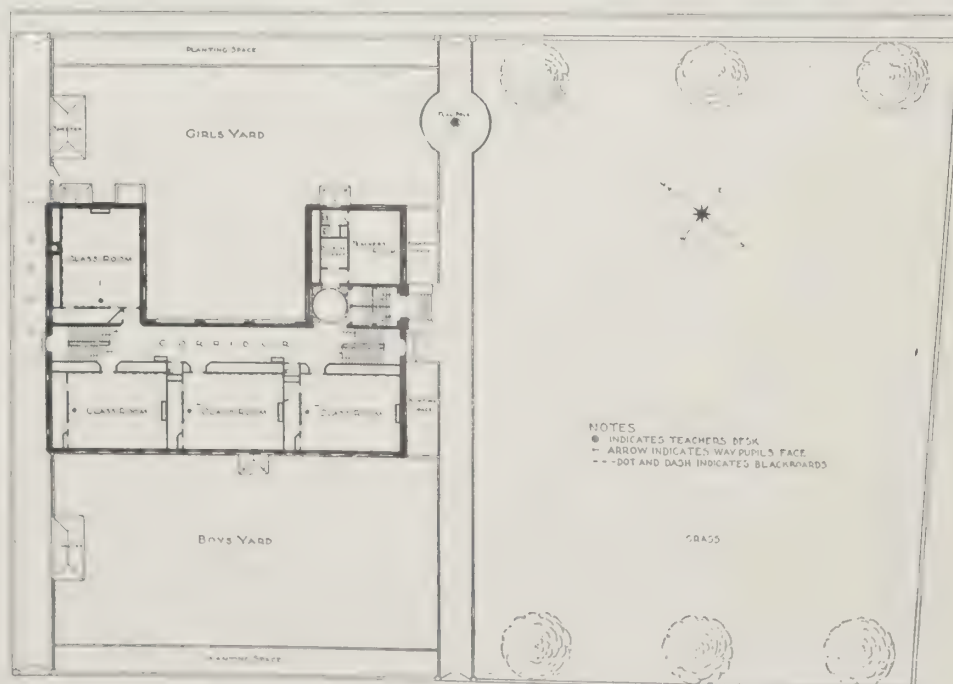
THE SAMUEL W. MASON SCHOOL.

This is a three-story fourteen-room primary school similar in scheme of plan to the Marshall, except that the main

entrance is at one side and not in the recessed wall between the wings. The rooms are all arranged with partial southerly exposure and with wardrobes at the teacher's end of the room. The yards are in this case separated, at either side of the building. The basement has the usual playrooms, toilets and heating apparatus, which is similar to that installed in the Ellis Mendell School. The teacher's room and storage room occupy the end of one wing on the first floor instead of being in mezzanines off the stair landing, as in the Marshall.

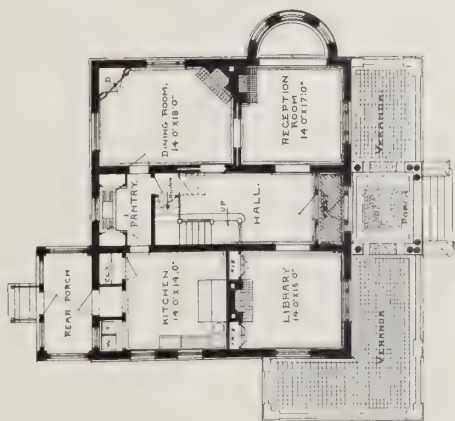
While this building shows an economical cube, its cost is excessive, the cost per cubic foot being higher than that of any other building the Board has erected. A careful examination of the figures and plans failed to show any extravagance. To test the possible saving between second and first class construction the plans were redrawn to make the building second class above the basement and the four lowest bidders were asked to re-

figure on this basis. Using the lowest estimates thus procured there was a saving of only 5.42 per cent. The Board decided, in view of the slight saving, to build first class as originally intended, but were able to effect some saving by certain changes in the exterior and yard. As noted before, the excess appears to be due to the grading of a large lot and unusually expensive foundations.

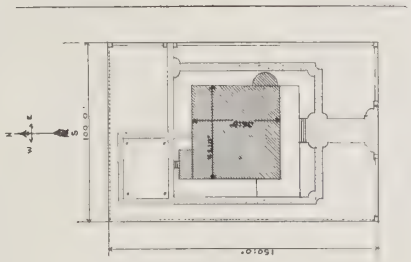


GROUND FLOOR PLAN, MASON SCHOOL.

• BRICK-BUILDER • FIRE-PROOF • HOUSE • COMPETITION •



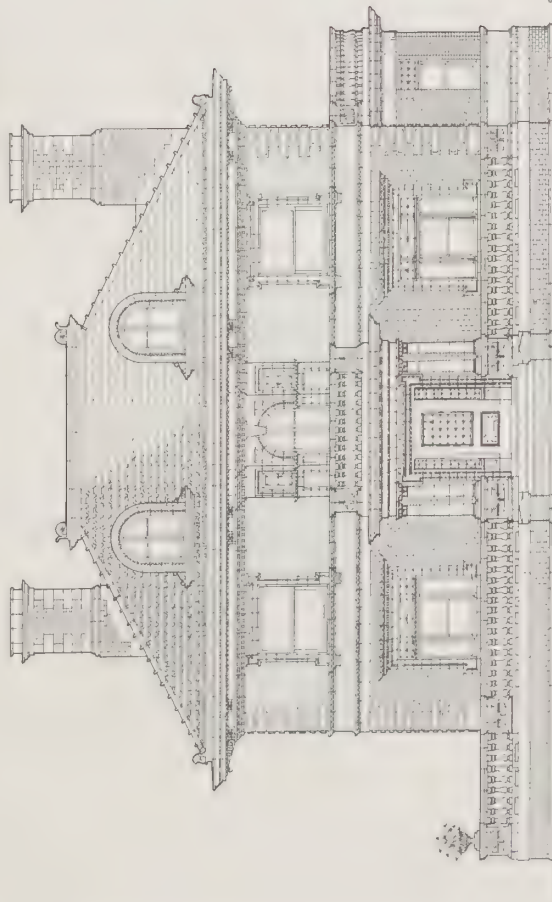
FIRST FLOOR
SCALE 1/8 IN. = 1 FT.



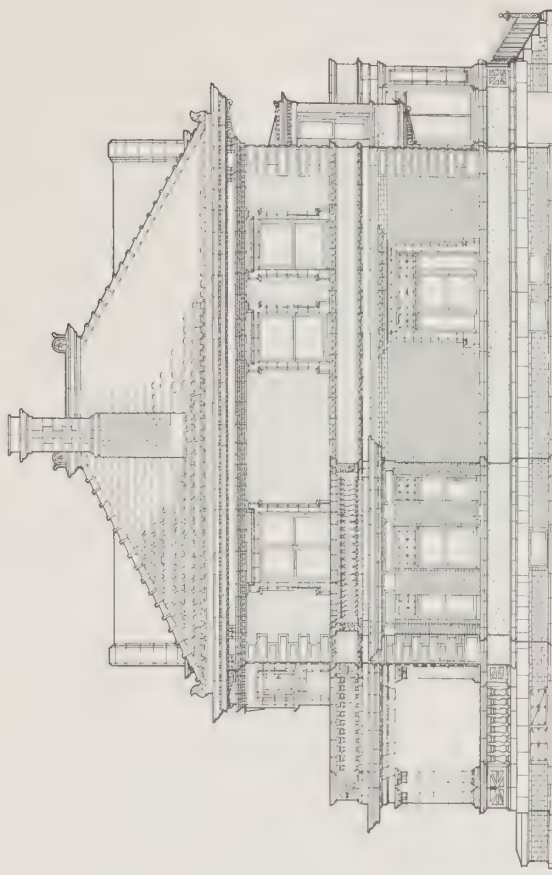
SCALE 1/2 IN. = ONE FT.
PLOT PLAN



SECOND FLOOR
SCALE 1/8 IN. = 1 FT.



SOUTH ELEVATION



EAST ELEVATION

SCALE 1/4 IN. = 1 FT.

FIREPROOF HOUSE COMPETITION.
Design submitted by Benjamin Wright, New York City.

Editorial Comment and Selected Miscellany

THE ELECTRICAL FIRE HAZARD.

THE number of fires caused by electricity indicates that in modern fireproofing of buildings the electrical hazard must come in for much more attention, and the reports of insurance inspectors should include somewhat more definitely the actual causes of defective wiring, short-circuiting or imperfect lamp installation. In the recent analysis of some one hundred and forty-five fires reported due to electricity, the relative causes showed that imperfect or careless workmanship of electricians and operators was responsible for many of them, and they were therefore preventable losses. Thirty-three of the fires were attributed to grounding, short-circuiting, defective wiring or to destroyed insulation, while twelve were from defective dynamos and motors through burning out of armatures or field coils. Twenty fires were caused by crossing of telephone or telegraph wires with lighting and power circuits, and five from incandescent lamps being placed too near inflammable material.

In modern fireproof buildings the installation of electric lighting, signaling and telephoning systems is supposed to be so arranged that fires cannot start from any defects in the wires or lamps. The switchboard in particular specifically requires incombustible material. The fireproofing of the dynamo room requires that every part of it should be shut off from the rest of the building by incombustible walls and floors. The floor itself should preferably be of glass, covered with rubber carpet. The complete insulation of the floor then makes the dan-



DETAIL BY FRANK FREEMAN, ARCHITECT.
Atlantic Terra Cotta Company, Makers.

ger from burning coils or armatures practically unimportant, while the danger from short-circuiting of wires is also reduced to a minimum.

A frequent cause of fire in the past has been the putting of steam and water pipes near electrical wires and switchboards. The bursting of one of these pipes when close to the electrical switchboard invariably made trouble. The water caused short-circuiting, and slight defects in insulation immediately became apparent.

A modern fireproof building cannot be safe from the

fire danger unless the electrical work has been done according to the best standards specified for this class of buildings. Imperfect workmanship is still quite common among electricians, and unless the work is closely inspected at the end the element of danger creeps in.



AN ALTAR PIECE EXECUTED IN ARCHITECTURAL FAIENCE.

By virtue of its peculiar power to start a flame within the walls of a building or behind woodwork in some closet or small room, electricity is one of the hardest fire hazards to deal with, and nothing short of perfect wiring and installation can be accepted as representing even a fair standard of safety. Fire underwriters have insisted upon inflexible observation of rules regarding electric wiring which many electricians have considered unnecessarily severe. The use of flexible cord, for instance, although properly insulated when installed, contains a menace which has been demonstrated in a number of cases. In the last quarterly report of the National Board of Fire Underwriters five fires were reported due to short-circuiting in flexible cords. The primary cause of these fires was further discovered to be due to the abrasion of the cord in contact with metal pipes, or to wrapping the cord around nails and other metal supports. Poor and defective insulation may have in the first place weakened the cord itself, but the proper use of the flexible cord becomes of special importance in view of the dangers thus invited.

In the matter of protecting property from fire caused by electricity, the American Street Railway Association has recently adopted some rules which tend to show a serious appreciation of the danger that lurks in electricity unless guarded at every point by the latest safety appliances. One of these rules is that all switchboard

cabinets shall be inclosed or lined with at least one-eighth of an inch of fire-resisting insulating material, and after being placed in position the inside of the cabinet shall be treated with a waterproof paint. Such protection is considered practically perfect. In a good many buildings where the electrical switchboard is a large one, similar safety appliances might well be adopted. The danger from water in connection with the switchboard is serious unless it is made practically waterproof. Leaking floors and roofs, overflowing faucets in washing and dressing rooms, and the bursting of water pipes through high pressure or freezing is likely at any time to introduce the element of danger in a building.

In the past few months the installation of several large department stores with motor-driven high-pressure fire pumps and sprinklers has reduced the fire hazard to some extent; but the drenching of any floor of a building with water in an emergency where electricity is used freely may cause additional fires unless every part of the system is absolutely water-tight. The motors used in the basement of the stores to operate the high-pressure service are waterproof, and can stand in



THE COLUMBUS SAVINGS AND TRUST BANK AND OFFICE BUILDING, COLUMBUS OHIO.

FRANK L. FORD, Architect.

Exterior walls and fire escapes faced with "Ironclay" fire-resisting bricks. Made by the Ironclay Brick Company.



DETAIL BY WIDMAN, WALSH & BOISSELIER, ARCHITECTS.
Winkle Terra Cotta Company, Makers.

stances the wires of telephone or telegraph systems were placed too near power and lighting wires, and the short-circuiting which followed proved disastrous. The elimination of this source of danger would greatly reduce the electrical fire hazard, but unfortunately it is a question placed beyond the jurisdiction of the individual builder. He may make his building as near fireproof as modern science can devise, and yet through some outside source the danger may enter the structure. The lighting and power companies in conjunction with the telephone and

several inches of water without suffering in any way. They are inclosed, and all connections are carried to them through waterproof pipes. The fields and armature coils are cooled by fans which work on the armature shaft, and every part of the engine room is insulated and fireproofed from all combustible material. Under almost any imaginable conditions such motors should supply a steady pressure of water for standpipes and sprinklers. All that is required to make their service perfect is the absence of defective wiring of the building.

The crossing of lines in or near buildings so as to cause fires is an inexcusable blunder of engineering, for the danger from such sources is too well known for any one to plead ignorance. And yet in the recent report of the National Board of Fire Underwriters twenty fires were attributed to such causes. In nearly all in-



DETAIL BY CHARLES E. BIRGE, ARCHITECT.

Conkling-Armstrong Terra Cotta Company, Makers.



DETAIL BY HOLMBOE & LAFFERTY, ARCHITECTS.
Northwestern Terra Cotta Company, Makers.

telegraph companies can alone be held responsible for such conflagrations.

The heat from incandescent lamps has been a prolific source of fire troubles. In spite of past experiences this danger has apparently not been eliminated from such buildings where nearly all other precautions are taken. In factories and warehouses where arc lamps are used, which are admittedly more dangerous than incandescent lamps, fewer accidents happen. The fact that the incandescent lamp is inclosed, and the heat is not so apparent to one, is often the chief trouble; but a heat that may not seriously burn the hand often causes fires when particularly combustible material is placed near it. Thus paper shades have caught fire from incandescent lamps after being used for some time, and this form of protection for the eyes really has its danger. A towel and a handkerchief tied around incandescent lamps became heated and ignited in two different instances, thus starting small fires in apartments. Many such lamps have been placed close to combustible material in the past because of the belief that they were safe. Paper trimmings that did not actually touch the lamps have caught fire, and



TYMPANUM PANEL EXECUTED IN TERRA COTTA BY
PERTH AMBOY TERRA COTTA COMPANY.

content to experiment with the small batteries used for ringing bells and telephones, many amateurs attempt to make connections with the electric light wires that enter the buildings. Such home-made fixtures invariably invite danger. In many instances the use of electricity by amateurs is on a par with the servant girl's employment of kerosene to start the kitchen fire in the coal range. The fact that more damage is not done in this way is probably due to the Providence which guards the footsteps of drunkards and fools. A case in point recently cited by an insurance inspector was where a defective home-made rheostat ignited the wooden partition to which it was fastened. The whole affair was screwed to a light wooden frame on the wall partition, and the current short-circuiting at the point of contact started a fire that burnt quickly into the wooden partition before it was discovered.

To limit the electrical fire hazard as much as possible a series of experiments was conducted recently to test the power of circuits for breaking down ordinary insulation and the danger that might result therefrom. In nearly all cases the insulation destroyed was found to be defective either in manufacture or by improper use. Good

insulating material, properly applied and used, will resist the current for which it is intended, and only defects through improper use or by the short-circuiting of heavy currents on the small wires will cause trouble. The grounding of circuits by the metal work on awnings put up after the building was completed has caused a number of fires, and they should be cited to show that danger from wires does not end after the architect and engineer

have completed their labors. Any alterations or im-



DETAIL BY NEW JERSEY TERRA COTTA COMPANY.

when large lamps have been employed for Christmas tree decorations, contact with loose cotton has in one or two instances started fires. The realization of a danger will go a long way toward averting it, and by appreciating the fact that there is cause for precaution in using incandescent lamps in certain places we may eliminate some fire accidents.

The general popularity of electricity among amateurs is responsible for a number of fire accidents. Not



MASONIC TEMPLE, NEWCASTLE, PA.

C. C. & A. L. Thayer, Architects.

Glazed terra cotta by Excelsior Terra Cotta Company.



FRONT ELEVATION.



GATE LODGE.



STABLE.



SIDE ELEVATION.

HOUSE FOR ROBERTS LE BOUTILLIER, ESQ., WAYNE, PA.

Built of Star Colonial brick, with black headers. Trimmed with Excelsior terra cotta, roofed with Bennett roofing tiles, all furnished by O. W. Ketcham, Philadelphia. Built under the direction of Charles P. Palmer.

provements made thereafter must be designed with a full knowledge of the presence of electric wires, and only competent workmen can attend to it. The amateur or unskilled workman can thus come into a building after it has been carefully fireproofed throughout and deliberately, but ignorantly, introduce a fire hazard that will largely nullify much of the careful work of the original contractors.

The burning out of armatures and coils in the basement of modern buildings should no longer be a source of danger. So well understood is the engineering neces-

sary to make such rooms fireproof that ignorance is no longer excusable. Where such dynamos and motors are not properly protected and insulated from all surrounding inflammable material the matter should receive the attention of authorities higher up. Many of the earlier installations of electrical equipments are not provided with the protective appliances adopted to-day, but they can be brought up to date so that the element of danger is



DETAIL BY GUSTAVE DRACH,
ARCHITECT.

Indianapolis Terra Cotta Co., Makers.

reduced to nearly the vanishing point. The electrical fire hazard can in this way gradually be limited so that it will no longer stand as a menace to modern buildings and homes.

EXHIBITION OF THE ARCHITECTURAL LEAGUE OF NEW YORK.

THE Twenty-first Annual Exhibition of the Architectural League of New York will be held in the building of the American Fine Arts Society, 215 West 57th Street, February 4 to 24 inclusive. January 6 is the last day on which architectural exhibits will be received. Exhibits will be discharged February 26.



SCHOOLHOUSE AT MADISONVILLE, OHIO.

S. Hannaford & Sons, Architects.

Roofed with American S tiles made by Cincinnati Roofing Tile and Terra Cotta Company.

The subject for the Medal Competition this year is a small chapel to St. Peter, to be built on a rocky promontory overlooking the sea. Competitors must be residents of the United States, under the age of thirty years. The subject for the President's Prize is the best study for a mural painting, "The Conclusion of Peace after War"; for the Avery Prize; the best design in plaster or clay for a wall drinking fountain in a city street.

IN GENERAL.

Horace S. Powers is now associated with

Robert C. Spencer, Jr., in the practice of architecture under the firm name of Spencer & Powers. Offices, Steinway Hall, Chicago.

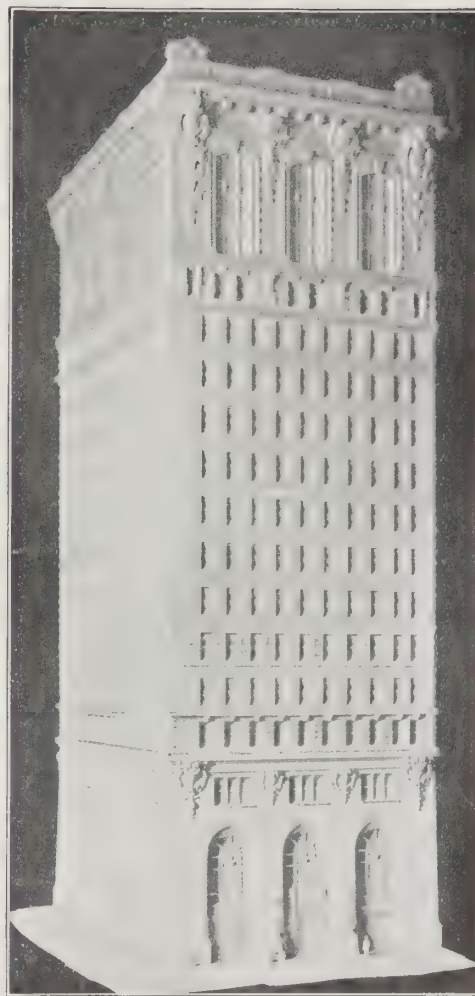
Architects Shollar & Hersh, Altoona, Pa., have taken new offices in the Altoona Trust Building.

A. P. Valentine, Jr., architect, Philadelphia, Pa., for the past six years connected with the government service at the Navy Yard, League Island, Pa., has resigned therefrom to accept the position of assistant structural engineer in the Bureau of Building Inspection, Philadelphia, Pa. This and other recent appointments in that bureau have been made as the result of open competitive examinations conducted by the reorganized Civil Service Examining Board of the municipality.

Herbert M. Baer, architect, has taken offices at No. 15 Cortlandt Street, New York City. Manufacturers' catalogues and samples desired.

The Washington Architectural Club has issued its syllabus for 1905-1906, from which it is evident that this body is alive to the awakened interest which is everywhere manifesting itself in connection with architecture.

Cabot's Red Brick Preservative has been used extensively upon the buildings of the National Cash Register Company, Dayton, Ohio, for restoring the original flat, brick-red tone of the bricks, and making them perma-



MODEL OF THE NEW AMERICAN TRUST
BUILDING, CHICAGO.

Jarvis Hunt, Architect.

To be fireproofed with the "Standard" system.
National Fireproofing Company, Makers.

nently waterproof. This company also uses Cabot's shingle stains upon its frame buildings.

The Tiffany Enameled Brick Company will supply forty thousand of their bricks for the new power house of the Commonwealth Electric Company of Chicago.

Celadon roofing tile will be used on the following new buildings: Large power house at Lockport, Ill., for the Sanitary District Canal Commission of Chicago, Isham Randolph, chief engineer. Lawrence Avenue Pumping Station, Chicago. A new laboratory for the Case School of Applied Science, Cleveland; and the new Carnegie



DETAIL BY SEYMOUR & PAUL DAVIS, ARCHITECTS.
New York Architectural Terra Cotta Company, Makers.

Library at Cincinnati. Their new "Imperial Spanish" tile will be used on the latter building.

The new McCreery departmental store, which extends from 34th Street to 35th Street, New York City, Hale & Rogers, architects, will be fireproofed throughout with Standard twelve-inch arches, furnished by the National Fireproofing Company.



DETAIL BY LOUIS CURTIS, ARCHITECT.
St. Louis Terra Cotta Company, Makers.

WANTED — In the office of a Detroit architect, a draughtsman familiar with the principles of Renaissance in composition, ornament and color. One who is a good colorist and a graduate of the M. I. T. preferred. Address with particulars, M. I. T., care of "The Brickbuilder."

WANTED — To handle account of some good corporation doing business with architects, engineers and contractors, on either a salary or commission basis. Extensive acquaintance west of Missouri River, including California and the Northwest. Present location Denver, Col. Best of references. Correspondence solicited. Address "Salesman," care of "The Brickbuilder."

COMPETITION FOR AN OFFICE BUILDING

First Prize, \$500

Second Prize, \$200

Third Prize, \$100

COMPETITION CLOSES DECEMBER 23, 1905

PROGRAMME



HE problem is an Office Building. The location may be assumed in any city of the United States. The site is at the corner of two streets of equal importance. The lot itself is perfectly level. The size of building is 80 feet square on the ground and 120 feet high. Number of stories left to the designer.

Above a base course of granite (not over 2 feet high) the exterior of the building is to be designed entirely in Architectural Terra Cotta.

For the reason that colored terra cotta is likely to be used extensively in the facades of buildings, it is desired that a color scheme shall be indicated either by a key or a series of notes, printed in the lower right-hand corner of the sheet of details at a size which will permit of two-thirds reduction.

The following points must be considered in the design:

A. Frank and logical expression of the prescribed material.

B. Rational and logical treatment of the architectural problem.

In awarding the prizes the intelligence shown in the constructive use of terra cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra cotta. There is no limitation of cost, but the designs must be suitable for the character of the building and for the material in which it is to be executed.

The details should indicate in a general manner the jointing of the terra cotta and the sizes of the blocks.

Drawings Required

On one sheet the front elevation drawn at a scale of 4 feet to the inch, and on the same sheet the perpendicular section of the front wall.

On a second sheet, half-inch scale elevations and sections of main entrance and any other portions of the building necessary to interpret the design, including a portion of upper stories and main cornice.

In the lower left-hand corner of the second sheet is to be shown the first and typical floor plans at a scale of 16 feet to the inch. The first floor plan may provide offices for a bank or insurance company. The main entrance corridor and location of the elevators should also be shown.

The size of each sheet (there are to be but two) shall be 24 inches by 36 inches.

The sheets are not to be mounted.

All drawings are to be in black ink without wash or color, except that the walls on the plans and in the sections may be blacked-in or cross-hatched.

Graphic scales to be on all drawings.

Every set of drawings is to be signed by a *nom de plume* or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before December 23, 1905.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names ten cents in stamps.

The designs will be judged by three well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of \$500.

For the design placed second a prize of \$200.

For the design placed third a prize of \$100.

We are enabled to offer prizes of the above mentioned amounts largely through the liberality of the terra cotta manufacturers who are represented in the advertising columns of THE BRICKBUILDER.

This competition is open to every one.

ROGERS & MANSON, BOSTON

THE BRICKBUILDER.

VOL. 14

DECEMBER 1905

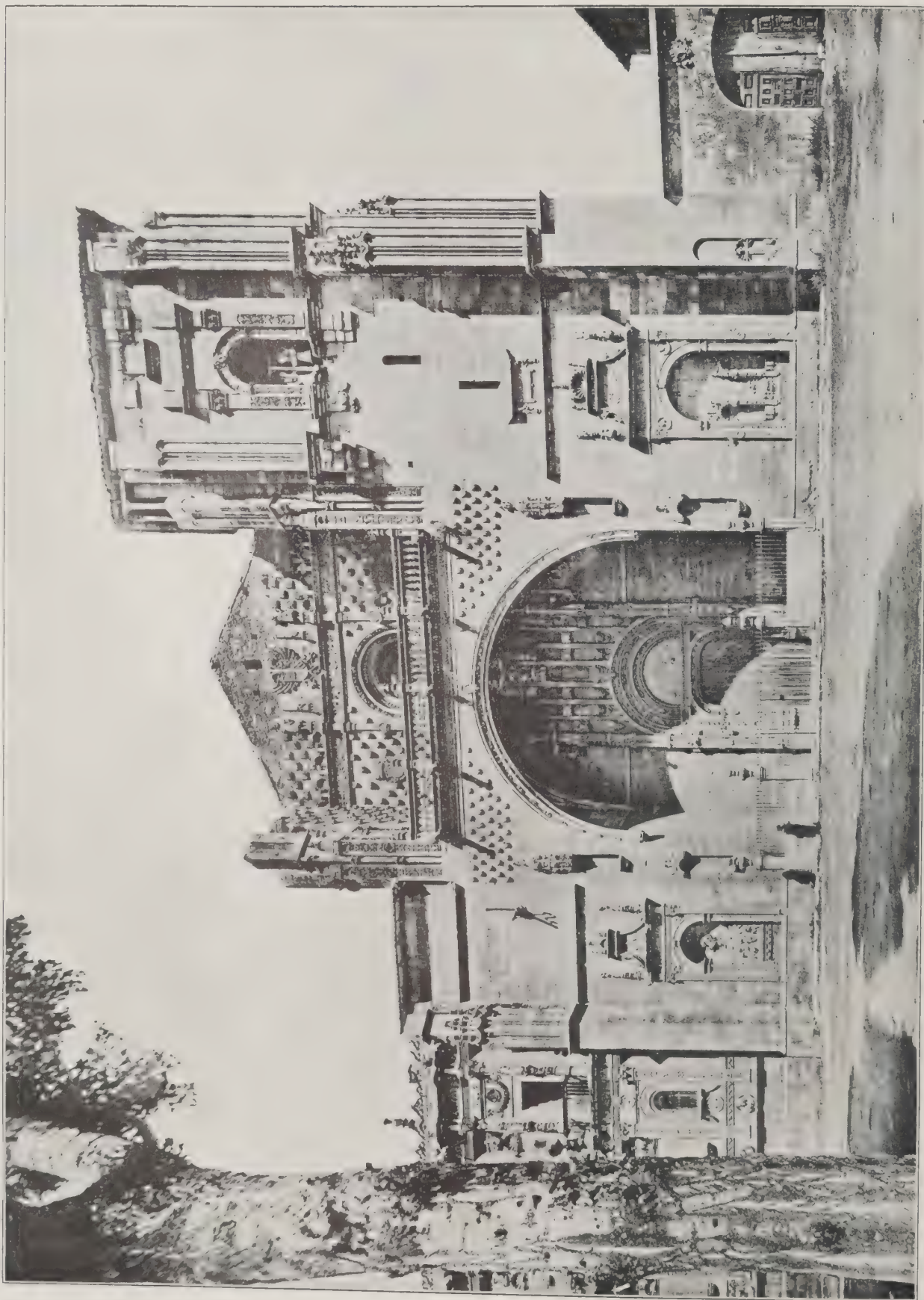
NO. 12

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PRICE, PURDON & LITTLE.

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CONVENT CHURCH OF SAN MARCO, LEON, SPAIN.

THE BRICKBUILDER

VOL. 14 No. 12 DEVOTED TO THE INTERESTS OF ARCHITECTURE IN MATERIALS OF CLAY DECEMBER 1905

THE BRICKBUILDER.

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OUR GOVERNMENT ARCHITECTURE.

IT is stated that within the past three years something like three hundred million dollars has been expended or appropriated by the national government for naval expenses. Since the founding of the Republic the total amount of appropriations for government buildings has been somewhat less than two hundred and fifty millions. These figures of themselves are commentary on the attitude which the government officials have taken in regard to what they consider the real needs of the country.

We are at peace with all the world. There is a crying need for good public architecture. And yet we spend money by the hundred million annually to keep up a navy, while Congress begrudges the necessary funds to build the right kind of public buildings. About last June the force of the office of the Supervising Architect was cut down by the discharge of something over sixty draughtsmen, simply because of lack of appropriation by Congress.

It cannot be said, however, that as a whole our legislators have been indifferent to the demands of the different sections of the country for public buildings; but there has been in the past a woeful lack of appreciation of the necessity of building our public structures in the right way, and when discussions have arisen in the Congress or in the Senate regarding architects and their work a distressing lack of real knowledge has been shown by our statesmen, and some of the statements regarding compensation for architectural work and what is expected in return have been at once ludicrous and distressing, showing how little real familiarity of the

subject is possessed by those who have the voting power in their hands.

Until the members of Congress, who vote the money, have a better knowledge of our profession we shall continue to have but a stunted development in our government building, and it is certainly the part of the American Institute to continue the work it has so well begun of educating the political public up to its obligations.

The existing conditions certainly do not spring from any lack of good intent on the part of our lawmakers. Indeed, where the matter has been fully understood, there has been no lack of proper response and endorsement, as is evidenced by the workings of the Tarsney Act, the cordial, if somewhat debated, support which has been given to the improvement schemes for Washington, the rescuing of the Capitol from incompetent hands and placing it in charge of architects who are competent beyond question, and in many other ways have we evidence that the campaign of education, which has been pushed so well and so thoroughly by the officials of the American Institute, has borne good fruit; but as a fresh crop of legislators comes to Washington every year the struggle is perennial.

The dinner of the American Institute held last year at Washington undoubtedly exerted a tremendous influence for good, and even the honored representative who has earned the title of the "Watchdog of the Treasury" must have at least more fully appreciated what architects wanted to do by having taken part on that occasion.

WE are strangely lacking still in this country in an appreciation of the real value of good architecture. A public building is not merely an opportunity for some architect to distinguish himself or for some contractor to carry out a difficult feat of construction, but it is a public necessity, not only in the merely practical way of appropriately housing public utilities, but in the more subtle direction of cultivating or forming public taste and building up the civic spirit by an appeal to the side of man which loves beauty for itself. It is distinctly along the lines of architecture as a fine art that the American Institute must pursue its campaign of education. The city of Washington is to-day the grandest object lesson in this line which we possess, but as time goes on we hope it will be yearly more and more unwise for any politician to return to his constituents without having contributed something to the development of good architecture.

Young Men's Christian Association Buildings. I.

BY WALTER M. WOOD, SUPERINTENDENT OF EDUCATION,
THE Y. M. C. A. OF CHICAGO.

THE Young Men's Christian Association in its simplicity consists of a body of men who associate their efforts for the promotion of Christian fellowship and the conduct of such institutional activities as shall best make for the safeguarding and development of Christian manhood. The building of an Association, therefore, is not really the Association, but as its tool naturally reflects in its structure and equipment the varied purposes to be served. Since Christian manhood, as interpreted by the Association, involves in well-balanced proportions the physical, intellectual, religious and social life of the individual, an Association building intended as an institutional center and means for the culture of such manhood must make provision for activities in all these lines.

In reply to the denial of the statement that "clothes make the man," it has been said that they do very largely after all, since they make all you see of the man except his hands and face. It is equally true that while the Association building does not make the Association, it does constitute in many cases the major basis of public judgment concerning it. This is so true that the building itself is frequently spoken of as the Association. If the institutional home of an organization is to bear so vital a relation to the public conception of the organization itself, the design and construction of a proper Association building constitute no small contribution to the promotion of its interests and purposes.

The first building ever erected for Association purposes was dedicated in Chicago, September 29, 1867, its third successor being the present million-dollar building of the Central Department of the Chicago Association. In 1869 the New York City Association erected what was known as its Twenty-third Street building, at the corner of Twenty-third Street and Fourth Avenue. This building, in its architectural design, was peculiarly adapted to accommodate the varied lines of Association work, and consequently served in a large way for the following two decades as a model of Association architecture. The subsequent enlargement of the Association scheme of activities, especially during recent years, together with the rapid building movement of the Associations in North America, have demanded the careful study among architects and Association officers of Association buildings as a unique and distinctive type of semi-public buildings. Last year the number of Association buildings in North America increased from four hundred and seventy-five to five hundred and seventeen in number, while the total valuation of such buildings increased from \$26,260,870 to \$28,105,050.

REASONS FOR HAVING AN ASSOCIATION BUILDING.

It is an almost essential tool for the conduct of institutional activities.

A working organization without adequate headquarters and without special kinds of equipment to accommodate its different activities is unable to concentrate its

forces and wastes much of its energy in trying to adapt itself to unfavorable conditions for its work.

It makes the Association conspicuous in the community.

No one thing so quickly and satisfactorily brings the Association into popular notice as the possession of an appropriate building.

It gives permanence and stability to the work.

The investment of a considerable sum of money in a good building is a self-evident guarantee of public confidence in the movement, and gives the Association a financial standing that is extremely valuable in bringing further support, and in enabling it to tide over periods of temporary financial stress.

It gives the Association independence of action.

As long as an Association does not control its own building it is always apt to be more or less hampered by regulations and conditions which may be determined by others not in sympathy with the purposes or methods of the organization.

It frequently provides a means of current income.

While an Association building should be built primarily for the Association that is to use it, it is usually possible to arrange for the rental of certain store room or dormitory space, which shall provide a means of income large enough to be a strong safety factor in the financial administration of the current work.

DESIRABLE FEATURES IN AN ASSOCIATION BUILDING.

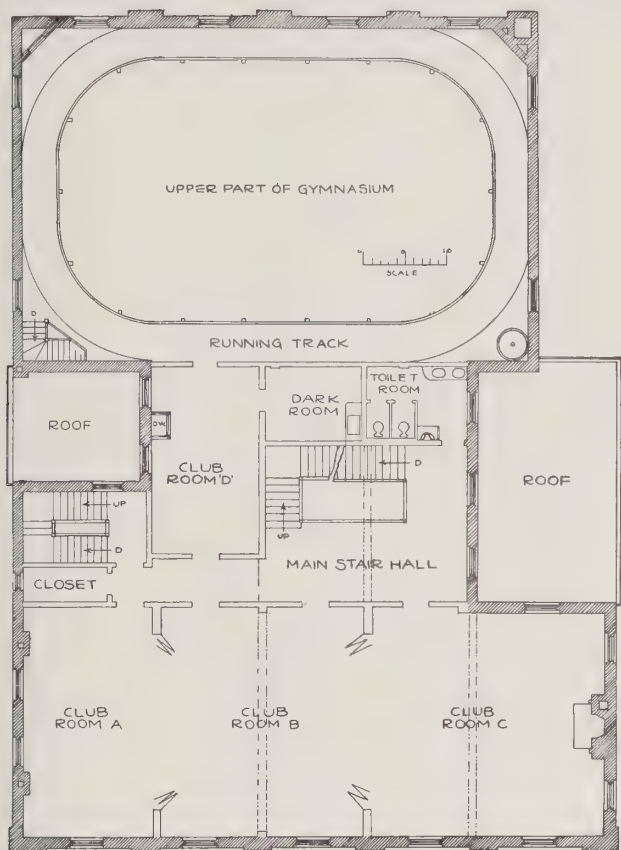
A list of the more essential features to be provided in an Association building intended to accommodate an all-round work would include the following:

A general reception room, with club or rotunda effect; general office with counter; private offices for the general secretary, physical and educational directors and other officers, arranged to be intercommunicating when desired; safety vault; closet for stock and printed matter; check room, controllable from general office, and general toilet facilities.

For distinctly educational use there should be a library and study room, accessible but retired, with one smaller and one larger room attached, suitable for educational talks and lectures, the larger room being capable of being darkened for use of stereopticon during the daytime; educational clubrooms, accommodating from fifteen to one hundred men; classrooms suitable for both day and evening work, accommodating from ten to fifty men each, two of the larger rooms being made so they can be thrown together; laboratories and, possibly, shops.

For distinctly physical work there should be provided a gymnasium, with running track and suitable visitors' gallery, handball court, bowling alleys; locker rooms, separate for men and boys; baths, tub, shower and steam; swimming tank, with special shower adjoining entrance; examination room, with emergency equipment to facilitate care of injuries; barber shop and bicycle storage.

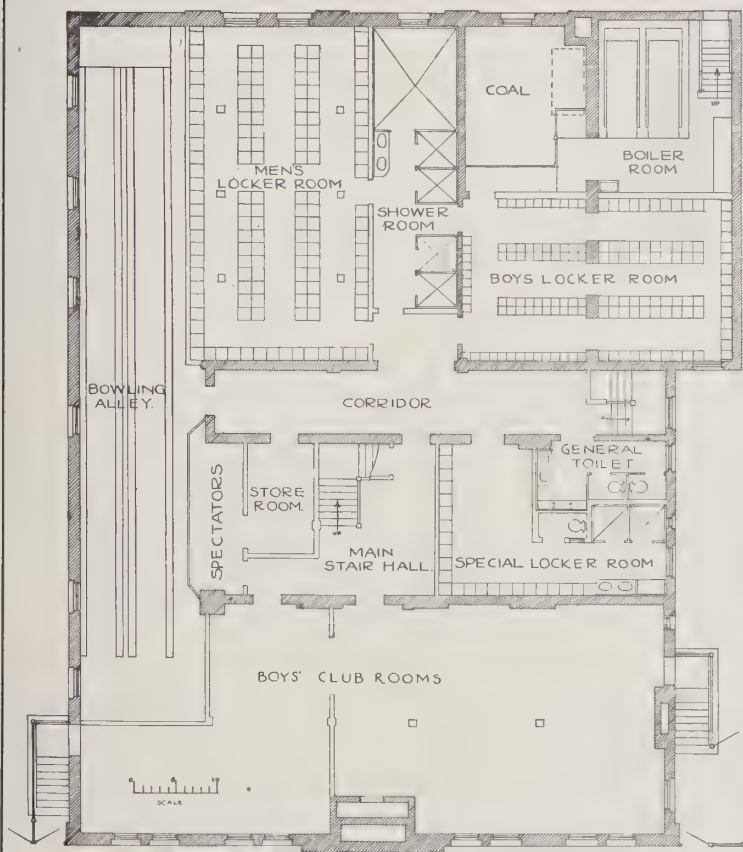
For social activities: conversation room or, possibly, parlors, perhaps adjoining restaurant, or serving as foyer to auditorium; music room; recreation or game room, possibly arranged for larger games, such as billiards; restaurant or dining room, with ample kitchen facilities; lunch or refreshment room, or "spa," adjoining general



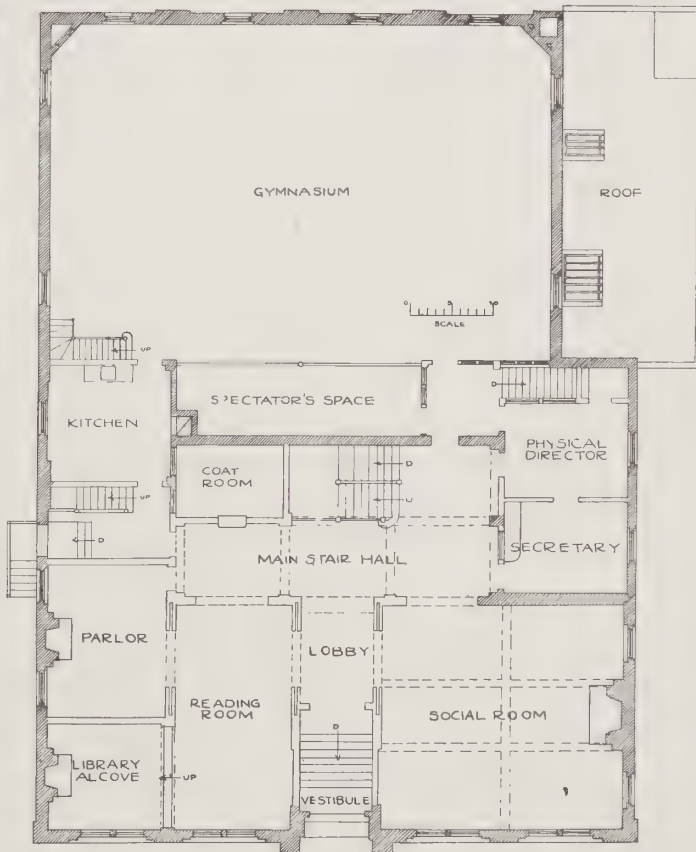
SECOND FLOOR PLAN.



THIRD FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

Y. M. C. A. BUILDING, ANN ARBOR, MICH.
Pond & Pond, Architects.



reception room, connected with kitchen by dumb-waiter; dormitories, each with closet, some of them capable of arrangement *en suite*; auditorium, entered from general reception room or by separate entrance.

Many of the features mentioned for educational and social work, such as library, talk, lecture, club, class and music rooms, together with the auditorium, should be planned with a view to their accommodating equally well the various phases of religious work of the Association. In addition to the equipment for men there should be provided separate rooms for boys, with separate entrance, including at least reception room, game room, library and reading room, class and club room and shop, besides separate lockers and toilet facilities, as indicated.

SOME CHARACTERISTICS OF A GOOD ASSOCIATION BUILDING.

Accessibility.

As the Association building is to become the natural congregating center of young men during their leisure hours, it ought to be so located as to make it readily accessible to those whom it is especially intended to serve. Provision should be made in the form of main entrance and elevation of first floor to give the impression of easy access to the building from the street.

Attractiveness.

The architectural style of the building should be such as to attract the favorable interest of young men, causing them to regard it as a hospitable place, at the same time marking it as one of the ornate public improvements of the community to which citizens will take pride in referring.

Economy.

In view both of the sources of its revenue and the very practical nature of its work, the Association building should be constructed with as much economy as durability, low cost of subsequent maintenance and utility will permit. While the building should not be too plain to lend dignity to the work done in it, it should not bear marks of extravagance.

Adaptability to both day and night use.

This characteristic may require special consideration

of matters of natural and artificial lighting, heating, ventilation, special provision facilitating janitor service and prevention of disturbance by noise.

Possibility of enlargement.

The growth of an Association immediately following the acquisition of a suitable building frequently results in an overcrowding of the facilities provided, making it extremely desirable that in as many lines as possible addi-

tional space can be readily and symmetrically added by the erection of additional stories or annexes contemplated as possibilities in the original plan. Such foresight may save an Association from unfortunate cramping at a time of prosperity or from the necessity of severe loss and interruption to work by the erection of a new building.

Composite unity.

The work of a well-rounded Association incorporates activities and requires forms of equipment very similar in physical lines to those of an athletic club; in educational lines very similar to those of a school; in social lines similar to those of a social club, and in religious lines somewhat similar to those of a church; but it should be remembered that the purpose of the Association is to harmoniously blend all these agencies, and therefore the Association building, rather than being a combination gymnasium, schoolhouse, social club and church, should be a composite unit. Each section should be made sufficiently distinctive to facilitate and dignify its work, but a division into seemingly independent departments should be carefully avoided.

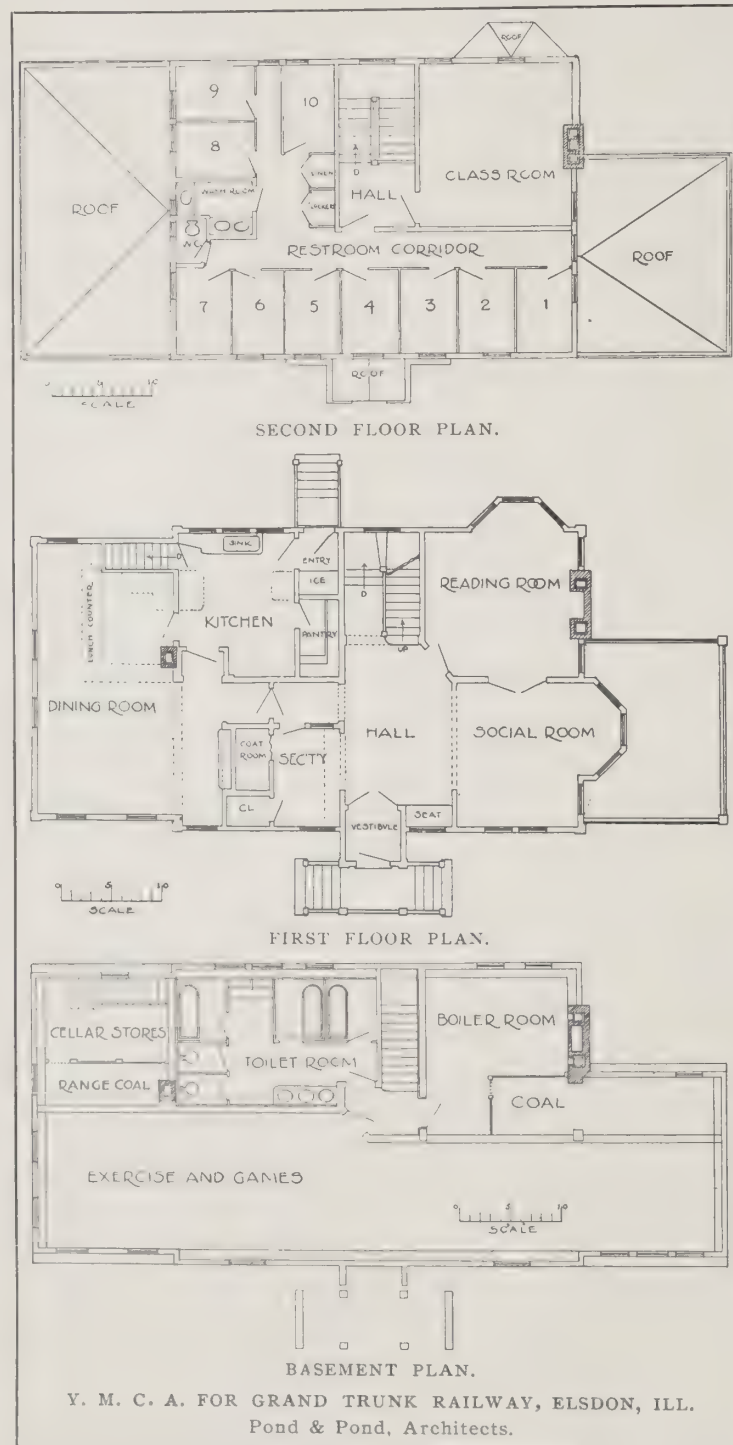
Flexibility of arrangement.

A growing organization, conducting constantly vary-

ing activities, should have its building so arranged as to permit the shifting of a room from one use to another without seriously modifying the general plan, and without involving any considerable expense for changes. Except when necessary the design of rooms should not be such as to make them suitable for fixed and limited uses only.

Ease of division for partial or separate use.

In an Association there are many times of the day and



certain seasons of the year when portions of the building need not be in active use. Provision should be made that at such times they may be easily shut off without harming the appearance and usefulness of the portions kept open. It is always advisable to have the open space reduced to the lowest working minimum. It is important that there shall be means of easy and complete separation of certain portions of the building for special use when desired, such as the auditorium when rented and the rooms of the boys' division.

Minimum of internal traffic involved.

One of the key principles in the disposition of space and arrangement of features is to so place them as to involve the least possible amount of travel on the part of a member going between the entrance or main reception room and any privilege which he may desire to use. A helpful method in securing this is to follow the likely path of a member in his use of the privileges and shorten the lines wherever possible. This reduction of traffic facilitates control, increases convenience and decreases disturbances and wear and tear.

Ease of control by minimum force.

Since immediate oversight of every privilege when in use is an essential feature of Association work, and since the number of employees must be as small as possible, it is expedient that the entire plan shall focus at one general office, and that privileges in other portions of the building shall be grouped around what might be called sub-foci, making it possible for a man at a central point to have within easy and effective control the use of all privileges in that section of the building. This reducing of

the number of foci to be manned reduces the expense and increases the likelihood of having them manned by competent help.

Non-interference of one feature with another.

The great variety of the Association's activities, and the fact that many of them may be in active use at the

same hour, require unusual care in the design of the building to prevent the active use of one privilege from disturbing those who are using another. For example, the placing and construction of the gymnasium and bowling alleys shall be such as not to throw out of use at the same hours the auditorium or classrooms. Likewise, the clubrooms, where applause is appropriate, should not be surrounded by classrooms, where quiet is essential; and the music room should not be an alcove of the reading room.

Arrangement of features magnifying their self-advertising value.

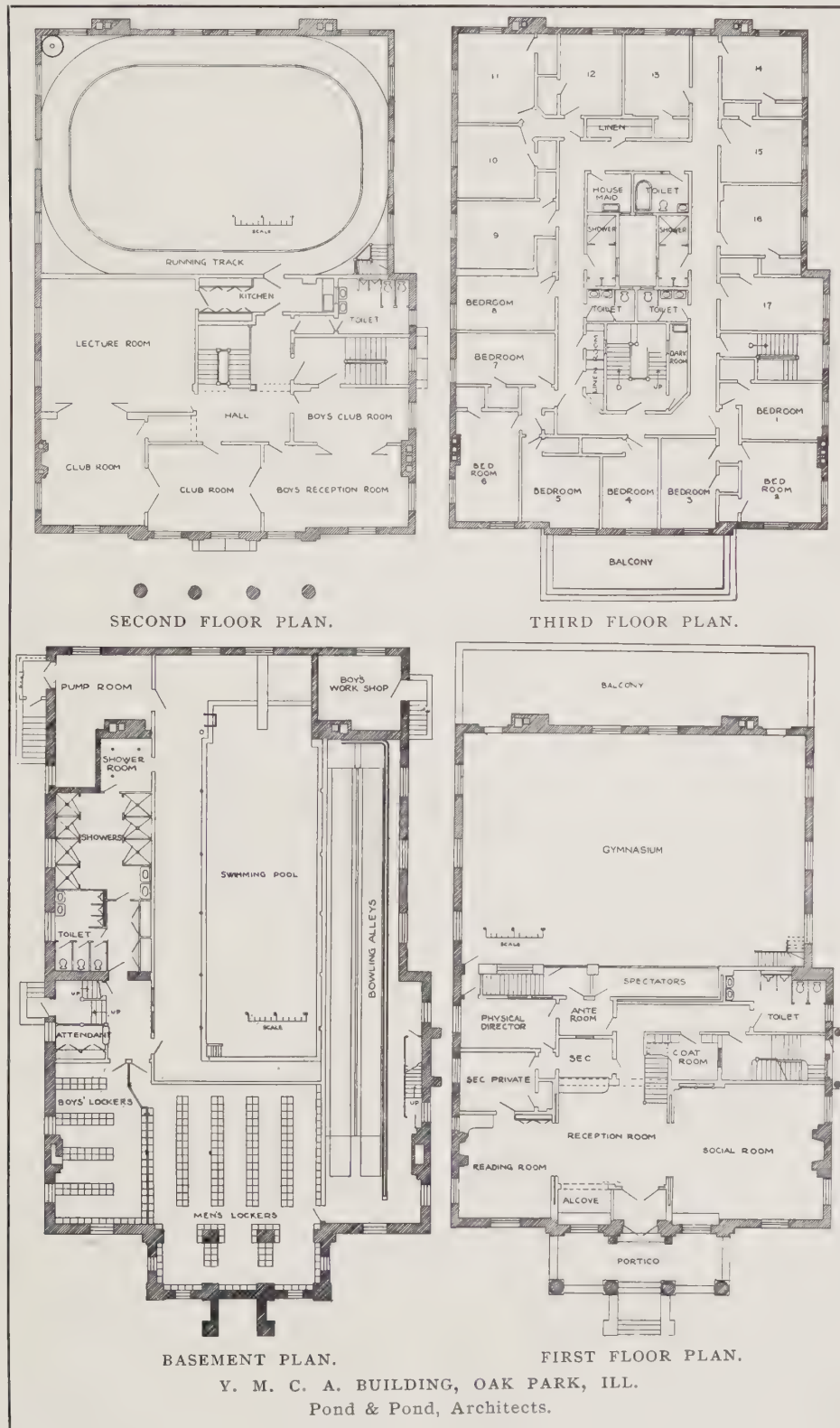
Since many men are attracted for the use of certain single privileges, and since the Association seeks to enlist men in all-round activities for their symmetrical development, it is advantageous that all features shall be so placed with relation to one another that the men who come for one thing shall automatically be brought face to face with other privi-

leges into the use of which they may be led.

MATTERS REQUIRING SPECIAL CARE, BUT OFTEN NEGLECTED.

Concentration of plumbing in accessible form for care and repair.

The extensive bathing and toilet facilities in an Association building of necessity constitute a large item of



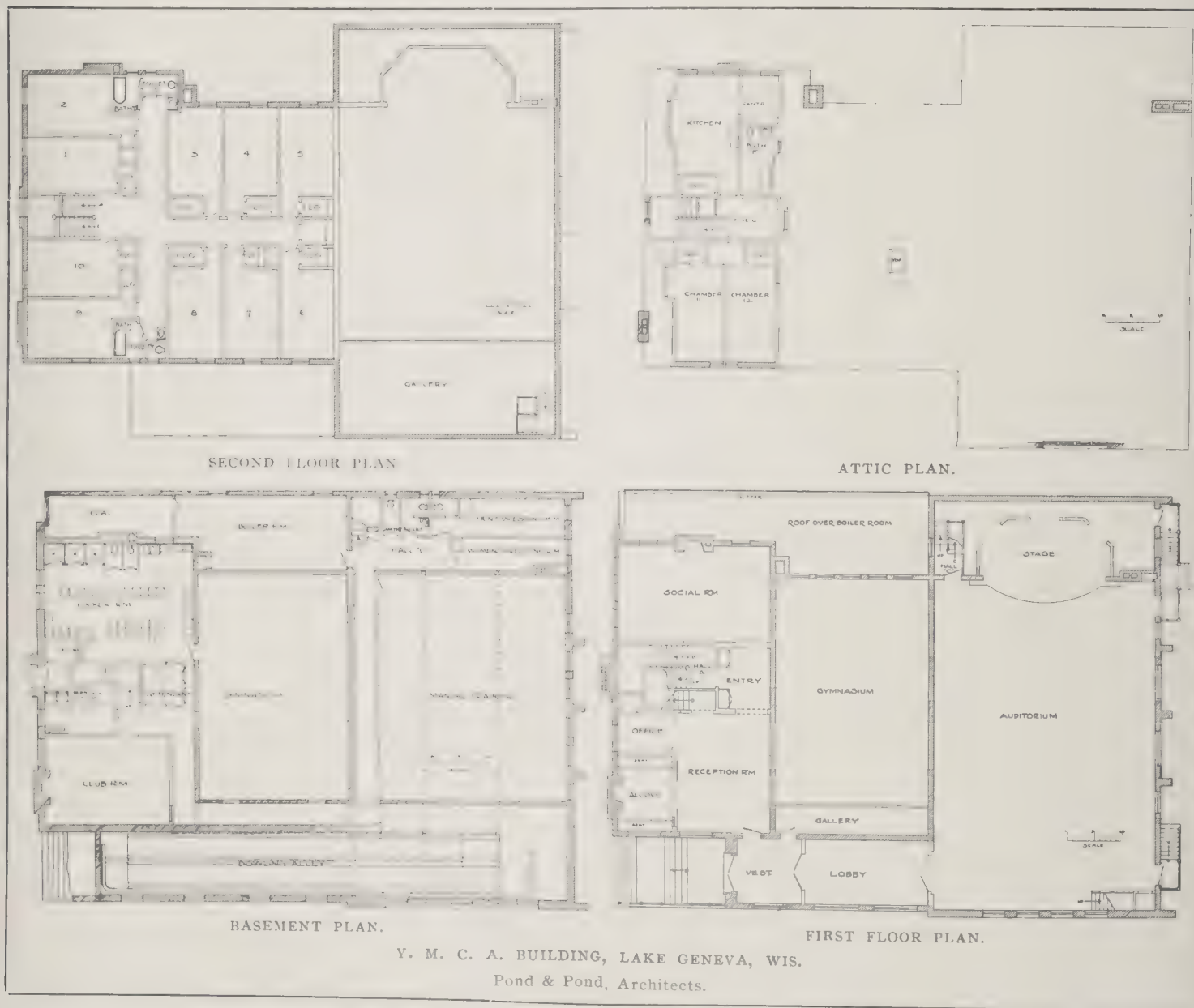
expense for construction. While convenience in arrangement of other features might make desirable a somewhat scattered or divided system of plumbing, the proper and economical installation of a plumbing system demands as little division as possible. Ample space should be used to make all plumbing easily accessible for frequent inspection and for repairs when needed. Special care needs to be exercised in the proper distribution of an adequate supply of hot and cold water.

Adequate and specially distributed lighting.

In view of the large amount of night use of an Asso-

Ventilation.

While the problem of ventilation is a common one to all buildings, some features of an Association require special provision in this line. Rooms and special ventilating apparatus should be so placed as to carry off the odors from the locker room, gymnasium, kitchen and restaurant and much of the steam from the bathrooms, instead of allowing the atmosphere of the entire building, for lack of this provision, to become heavy and noxious. In rooms of assembly, as the auditorium, club and class rooms, an unusual provision for fresh air is requisite, as



ciation building and in view of the many rooms, such as reading and class rooms, where close application to work is required, there is necessity for an abundance of light and for its distribution to meet particular demands, instead of its being entirely massed for general lighting by chandeliers and the like. Provision should also be made that the lighting system be cut up into small enough units to make possible the lighting of small sections independently, rather than lighting up a large section when it is needed only at one point. This provision means very much in economy of operation.

the rooms are occupied usually by men after a day of active work and who are, consequently, especially susceptible to drowsiness.

Adequate and rightly placed storage and workroom space for engineers and janitors.

The varied activities of an Association involve the possession of equipment needed from time to time for temporary use. Proper storage space should be provided for this equipment when not in use in such form as to furnish it proper protection and make it accessible when wanted without involving difficult or expensive handling.

Much repair work can be done within the building at slight expense if there is a sufficient working space set aside for it. To such storage and work space things not in use, or needing repair, can be taken at once, thereby freeing the Association rooms from being cluttered with unnecessary and broken furniture and apparatus.

Dressing room, lavatory and toilet facilities for the employed help and also for women.

If not regularly, most Associations from time to time must have on duty or in attendance at their building a considerable number of employees or guests, both men and women, for whom it would be inconvenient and perhaps impossible to set apart a portion of such facilities from those regularly provided for members' use. This necessitates special provision of such facilities, so located as to make for the greatest convenience and least interference with the regular operation of Association activities.

Bulletins.

The numerous and varied activities of an Association which require specially posted notices, either in front of the building, in the reception room or at sub-centers throughout the building, make it expedient that the plans shall incorporate bulletin boards of proper size, so placed as to effectively harmonize with the general architecture and equipment, thus preventing their being put later in unsightly places, much to the detriment of the general effect.

Standard dimensions for physical work features where competitive records are involved.

The equipment for numerous games and other features, such as the swimming tank, must be of standard proportions as defined by athletic bodies, if records made in their use are to be recognized in competitive lists. While an Association may not desire to emphasize competition or record making for recognition by athletic bodies, it is unfortunate to be denied such opportunity by avoidable limitations in equipment.

The planning of a modern Young Men's Christian Association building is a new and unique piece of architectural work worthy the most interested and conscientious effort of any architect. Upon the design which he executes hinges in no small degree the public's conception of the Association and the free or restricted development of its purposes. For an architect to give to a Young Men's Christian Association a building really suited to the purpose of its work is to render a great service, contributing to the development of Christian manhood and the promotion of the public welfare.

MUCH of our architecture suffers because of the commercial limitations which are generally at the very start imposed upon the architect. Especially is this true of such a structure as a theater, which, of all buildings, permits of a logical relation between plan and exterior, and an accusing of the interior arrangement on the exterior design. But there is not in this country to-day a single theater building which is designed in the broad academic manner, or which has a plan which of itself could be called architecturally interesting. The architect is invariably told to design a theater for a given site, and the site is selected upon purely commercial considerations, without reference to its peculiar fitness.

The Work of the Boston Schoolhouse Commission, 1901-1905. III.

INFORMATION TO ARCHITECTS.

THE Board have furnished each architect with a copy of a previous specification to serve as a pattern. In this way the form of the specifications has become standardized, omissions made unlikely, and reference made easy for those who are constantly using a large number of different specifications. In addition "General Information for First-Class Construction"* is furnished by the Board. This information, as given in the last report of the Board (February 1, 1904, to February 1, 1905), is briefly as follows, together with some notes as to the steps by which they have arrived at their present regulations.

In general, all buildings are of first-class construction throughout, including the roof. This avoids certain restrictions as to enclosed staircases, etc., which would obtain in second-class construction and which the Board consider undesirable. As was shown in connection with the Samuel W. Mason School (noted in article II, November number) the excess of the cost of first-class construction over that of second-class is not great, and in view of the benefits obtained the Board consider it worth while.

Schoolrooms. The dimensions of the classrooms are now fixed at 24 feet by 30 feet for primary and 26 feet by 32 feet for grammar grades. The primary room was originally 24 feet by 32 feet, but was modified in 1903 to the present size. During the same year, having definitely fixed the sizes of the desks and seats, the Board established two alternative dimensions for the grammar grade, *i. e.*, 24 feet by 32 feet and 26 feet by 30 feet, which would seat fifty pupils instead of the standard fifty-six, and which could be used in exceptional cases where pressed for room. The standard height is set at 13 feet in clear. Modifications of the standards are made only after consultation with the Board.

The lighting called for is for windows in a long side arranged for left-hand light. The sill is set at 2 feet 6 inches from the floor, and all windows are desired to be square headed, extending close to the ceiling, the total area of glass to be not less than one-fifth of floor area, or about 160 square feet for a standard primary room. Large sheets of glass are not desired, the windows being preferably divided with muntins. Architraves are omitted and the jamb plastered to a metal corner bead. Each room has but one door to the corridor, 3 feet 6 inches by 7 feet, and partly glazed for easier inspection by the principal during school hours. Georgia pine rift or maple is specified for floors. The walls now are painted burlap up to top of blackboard with tinted plaster above. At first the burlap extended merely to the window sill. The blackboards, always 4 feet high, are placed at the teacher's end, and on one long side in primary schoolrooms and on the wall opposite the teacher as well in grammar. The bottom of the blackboard varies from 2 feet 2 inches from floor in kindergarten rooms to 2 feet 8 inches from floor in grammar schoolrooms, and in primary schools

* Boston Building Laws define first-class construction as fireproof construction throughout.



JEFFERSON SCHOOL.

Grammar, Lowell District, Heath Street. Shepley, Rutan & Coolidge, Architects.

19 rooms: 950 pupils.

Cube, 856,777 (855,000). Cost, cubic foot, \$0.24 (\$0.22).

Cost, \$210,890.49 (\$188,100). Cost per pupil, \$221.99 (\$198.00).

a rack is arranged over the blackboard to take cards. Picture moldings at top of burlap and at ceiling are used in both grades, and the details for chalk gutters, etc., are furnished by the Board. The artificial lighting is by electric light reflected from the ceiling. Six groups of four lights each, with underneath reflector, throw the light against the plaster ceiling, which is left level and untinted. Each room has its bookcase let into the wall and fitted with movable shelves for three hundred books behind glazed doors, with drawers and cupboards below, drawings of the standard type being furnished by the Board. A small closet for the teacher's coat and hat is desired opening from the classroom, but may open from the wardrobe.

The wardrobe adjoins the classroom and is entered by two double swing, partly glazed doors, both from the classroom, there being no direct connection with the corridor. The walls are treated as in the classroom, the burlap extending up to the hook rail, which is set at different heights for the different grades, with shoe and umbrella rack below. There are no thresholds to the doors. An open space under one door or an open panel assists the ventilation of the wardrobe, which has its own vent duct. The wardrobes are from 4 feet 6 inches to 5 feet 6 inches wide.

The corridors vary from minimum widths of 8 feet for a four-room floor plan and 10 feet for a larger number, the size being governed by length, access, etc. Outside light into the corridors is considered essential. Tile, terrazzo or granolithic is used for the floors. There are

NOTE.—The figures in parentheses, given in connection with the titles, are limits set by the Board.

one or two 4-foot sinks on each floor above the first in the corridor. The walls of the corridors have a 7-foot dado of painted burlap, with untinted plaster above.

The number and arrangement of the staircases are determined by law, the construction in all cases being fire-proof. North River stone on iron frame or granolithic surface on concrete construction is the general type of tread, the North River stone giving the greatest satisfaction for durability and cleanliness. Wall rails are not considered necessary, but are put on if the principal wishes. The rails are kept high (2 feet 8 inches on runs and 3 feet on landings), with simple, easily cleaned pattern, and the steps are 6½ to 7 inches by 10 inches. A center rail in stairs over 5 feet wide was at first required, but has been abandoned.

In each grammar school there is to be a room centrally located for the master, with toilet and book closet. In all

schools teachers' rooms are provided, averaging about 30 square feet per teacher, with one water-closet and bowl for each ten. Where men as well as women are teachers there is a separate room arranged for the men. A general book room is provided in each school, fitted with cupboards and shelves and depending in size on the grade and size of the school.

All the free basement space is arranged as playrooms for boys and girls, the walls being lined with salt glazed brick up to seven feet, and being painted or whitewashed above, the ceilings being plastered and the floors having asphalt or granolithic surface. From these playrooms there are exits to the playgrounds adjoining the building. The playrooms for the boys and girls are intended to be separated, but in some very compact plans it has been impossible, and a common playroom has been all that the space would allow. This is not desirable, as proved by the Jefferson School, illustrated in this number, where the common playroom has resulted in keeping the boys outside until time for school to begin.

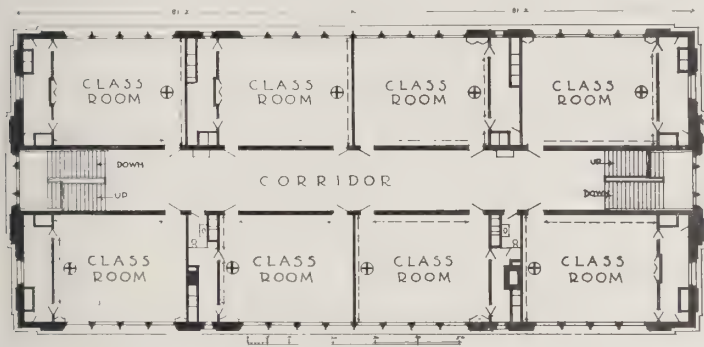
In grammar schools the assembly hall is arranged with a platform capable of seating one or in the larger schools two classes. Galleries are allowed where the hall is two stories high, and anterooms near the platform are needed with connection from adjoining classrooms either through anteroom or direct to platform. The floor is kept level, and the hall is expected to accommodate the whole number of pupils in the smaller grammar buildings, but in the larger ones to seat generally not over six hundred to seven hundred.

A drawing is furnished showing the standard arrange-

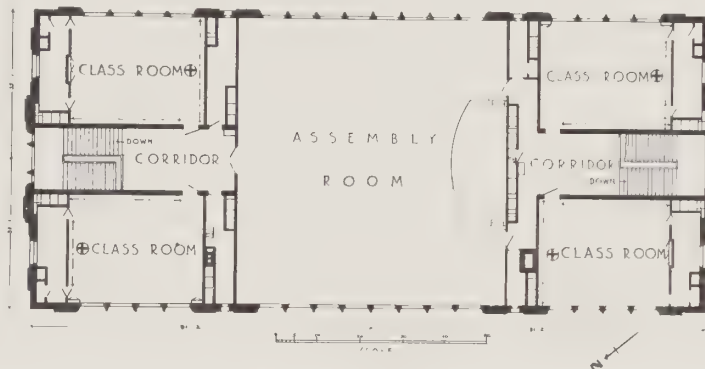
ment of a manual training room of thirty benches. The room should have windows as near full length as possible, and a corner location with windows on two sides is desirable. In the corner between the window walls are placed the demonstration bench and steps. Each room should have a wardrobe with space for thirty hooks, a large teacher's closet with shelving where finished work can be stored, bookcase as in regular classrooms, about thirty running feet of blackboard, a large work rack across one end of room 2 feet deep and 6 feet 6 inches high, and a stock room of about 80 square feet, with two 18-inch shelves on all walls. A 3-foot sink is a convenience but not a necessity. The room is finished simply if in basement, with sheathed or painted walls; if above the basement it is finished like the classrooms. The furniture,

on the first floor with south or southeast exposure and large enough to take a 16-foot circle with 4 feet outside; also an adjoining room connected with this of about 200 square feet. If on a corner, light from both sides is used. The fittings are similar to ordinary classrooms, only the tack board over blackboard should be covered with burlap, and two bookcases or one large one should be provided. A store closet for supplies is needed, and a somewhat larger teachers' closet than in other rooms, as there are three teachers. Wardrobes are similar to general type, with space for sixty hooks, and a water-closet and slate sink are convenient features to have adjoining the kindergarten.

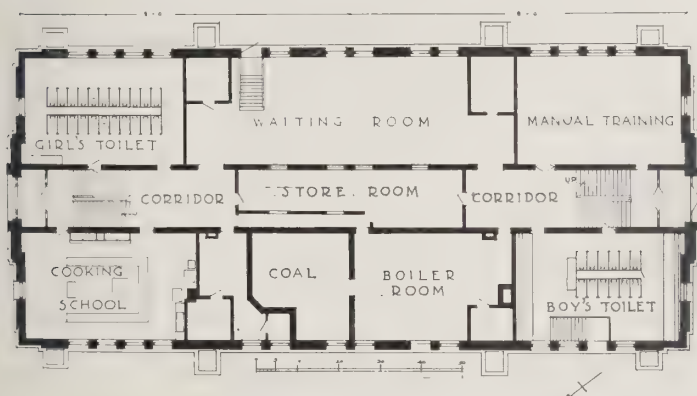
The general toilet rooms are put in the basement. The basis of accommodation is three water-closets (two girls',



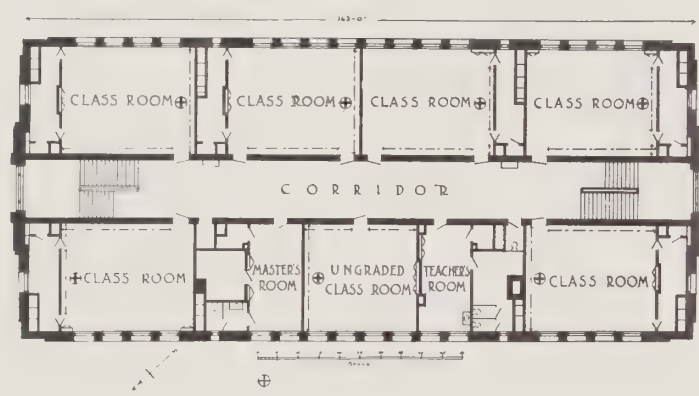
SECOND FLOOR PLAN.



THIRD FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

(CROSS IN CIRCLE, TEACHER'S DESK. LINE AND DOT, BLACKBOARD.)

PLANS, JEFFERSON SCHOOL.

consisting of the workbenches and stools, display frames, demonstration steps with guard rail and a large table with unfinished top besides the teacher's desk, is not included in the general contract.

The cooking room is of the size of a classroom and wardrobe combined or larger if space is available, and like the manual training room may have light from two sides. It is furnished with workbenches to accommodate twenty-eight pupils, set in an open form with a detached demonstration bench in the middle of one long side, with an opening opposite giving free access to the enclosed space, in which is placed a dining table. Each station is fitted with a Bunsen burner with hinged iron grill set on aluminum plates. The room is furnished with wardrobe closets, teacher's closet, a section of blackboard 10 feet long, a dresser 10 feet long in three sections, a fuel box, bookcase, sink, refrigerator and demonstration coal and gas ranges set on tiled hearth.

The kindergarten, if required, is placed preferably

one boys') and thirty-six inches of urinal for each classroom. Slate sinks, 12 inches per classroom, are located preferably in the playrooms. In large schools the number of fixtures can be considerably reduced from the above, especially on the boys' side. Ample outside light is required. Glazed double-swing doors give access. The floors are asphalt, and in the boys' toilet drain to the urinal, in the girls' draining to a floor wash. The ceilings, as in all the basement, are plastered directly on the under side of the floor construction.

Heating and Ventilating. Detailed information for the size and location of the heat and vent ducts is given for both gravity and fan systems. In a gravity system the heat duct is on basis of one square foot of cross section for each nine occupants; in a fan system the same for each fourteen occupants. The location of opening is the same in both cases, being in the middle of wall opposite windows, or, if the room be a corner room, within ten feet of outside wall. The bottom of the opening is



MATHER SCHOOL.

Grammar, Mather District, Meeting House Hill.

Cram, Goodhue & Ferguson, Architects.

31 rooms: 1,550 pupils.

Cube, 1,353,831 (1,240,000).

Cost, \$288,380.46 (\$272,800).

Cost cubic foot, \$0.21 (\$0.22).

Cost per pupil, \$186.05 (\$176.00).

8 feet high, and in a fan system the opening is one-third larger than the duct, but in a gravity system is the same size. No guard is put in the opening, and it is finished inside like adjoining walls.

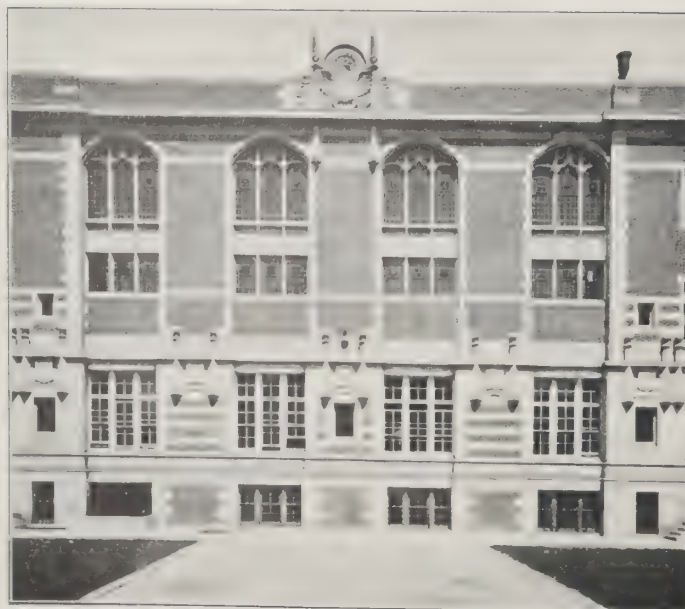
The vent ducts allow about one square foot for each ten occupants or each sixteen occupants, according as the system be gravity or fan, and are located where possible on same walls as heat ducts, but in any case on an inside wall. The openings are full size of ducts, and the floor is carried into bottom of duct, the base-board carried around and the exposed inside of duct finished like adjoining walls.

Each wardrobe has vent duct of 123 square feet section, with top and bottom registers, and the space under door as noted above allows air to pass freely from classroom through wardrobe and out vent duct. The doors

into toilet rooms have openings, either in lower panels with register face or under door, equal to area of vent duct. The size of the vent duct is on the basis of 12 inches for each closet and for each 16 inches of urinal space. The rooms are vented through the seats, each seat having

local vent of 13 square inches, and through slots at bottom edge of urinal slab close to the trough, according to a standard drawing furnished by the Board.

The buildings are all wired for electric light, with gas outlets provided in all corridors, stairways, vestibules and boiler room. In the classrooms the fixtures have already been noted as specially designed by the Board for combined direct and diffused light: these six groups are governed by three switches, and in addition there is a drop light over teacher's desk. Wardrobes have each a two-light ceiling



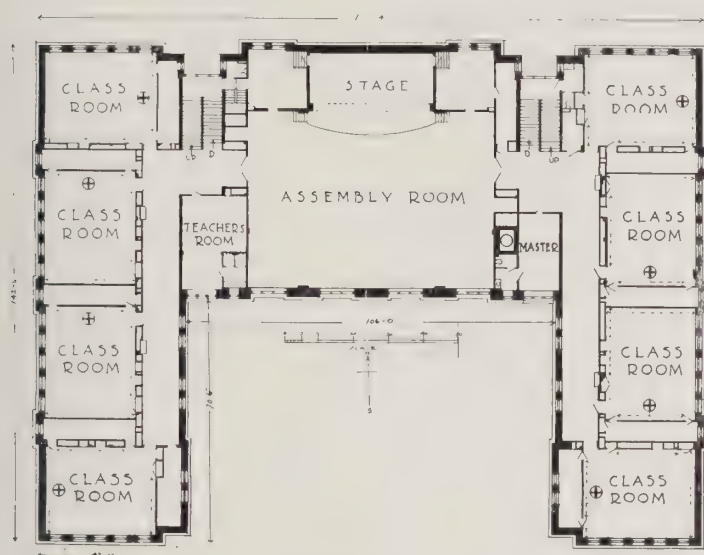
DETAIL OF REAR, MATHER SCHOOL.

outlet. The corridors are lit from ceiling wherever possible, with emergency gas in addition. The switches in corridors, playrooms and toilets are operated by a private key.

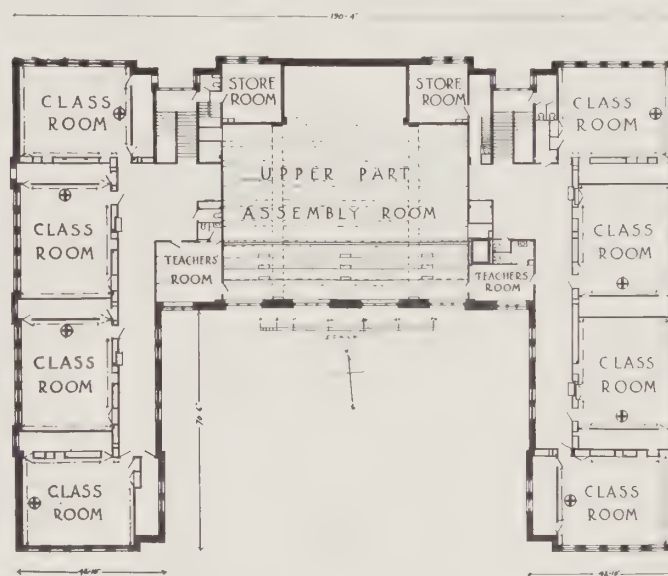
A complete system of clocks and bells is installed in each school, the clocks operated by a master clock, and the bells operated by a push button in primary schools, but operated automatically by the master clock in grammar and high schools. In every school each room, hall, teacher's room and boiler room is connected to master's office or first assistant's room by a telephone system.

have applied and would be eleven per cent less than those given.

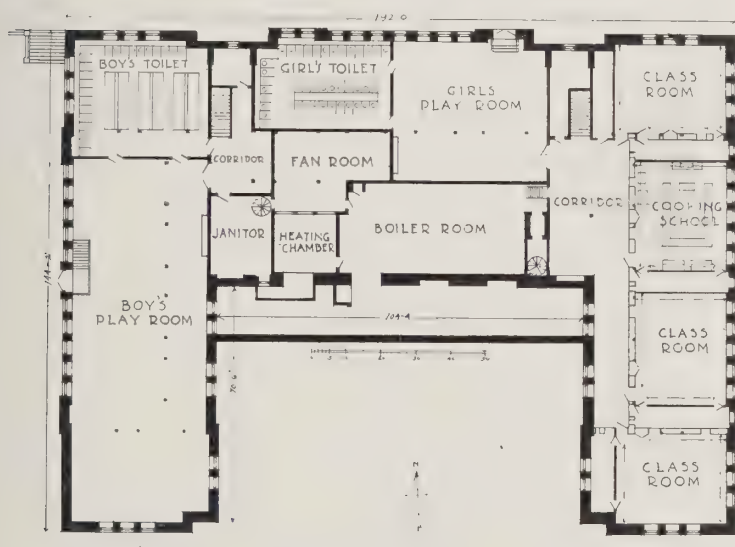
The plan is a very compact rectangle, with the rooms giving off on either side of a corridor running the length of the building, with stairways and entrances at the ends. The second floor, with eight rooms, is quite an ideal plan. The arrangement of windows, however, was influenced by the design, so that either the second floor with its slender iron mullions has too much light or the more solidly constructed first floor too little, and the assembly hall on the third floor, with the second floor fenestration carried



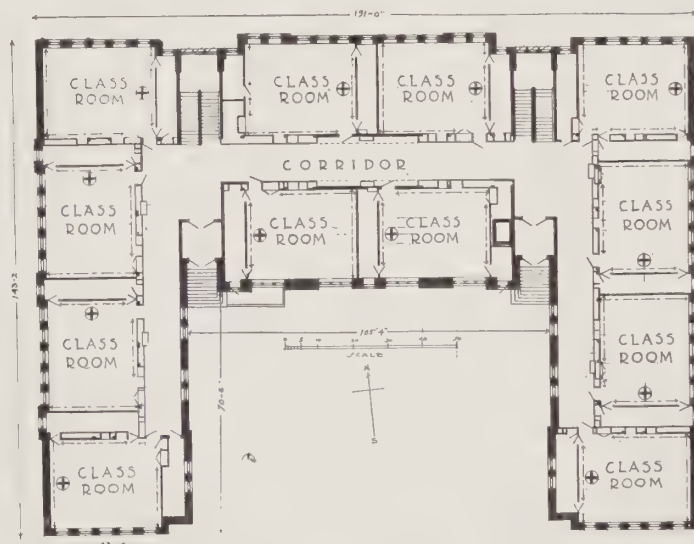
SECOND FLOOR PLAN.



THIRD FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

(CROSS IN CIRCLE, TEACHER'S DESK. LINE AND DOT, BLACKBOARD.)

PLANS, MATHER SCHOOL.

THE JEFFERSON SCHOOL.

This is one of the first grammar schools built by the Board, being contracted for before they had standardized the requirements to the extent they subsequently have, and to this cause they assign the excessive cost. The Board's inability at that time to instruct the architects as to the necessary reductions, and a site which required four months of blasting together with a somewhat expensive glass and iron exterior wall construction forced the cost above the highest limits, which are those given in parentheses in connection with the illustrations. Being a school of over eighteen rooms, the low limits should

up, has an undesirable amount of light for a room of that nature. With this symmetrical plan and treatment of elevations, the assembly hall, the largest unit in a grammar school, finds no expression in the exterior, and this plan would therefore seem more logical for a primary building, for which, with the third floor like the second, it would be ideal. Here the assembly hall occupies the space on the third floor equivalent to the four central classrooms and corridor space on the floor below, gaining the necessary height by a somewhat higher central section of the flat roof blanked by a higher balustrade. Owing to the compactness of the plan there is insufficient



OLIVER WENDELL HOLMES SCHOOL.
Grammar, Gibson District, School Street, Roxbury.
A. W. Longfellow, Architect.
24 rooms: 1,200 pupils.

Cube, 991,609 (960,000). Cost cubic foot, \$0.19 (\$0.22).
Cost, \$188,326.47 (\$201,200). Cost per pupil, \$156.94 (\$176.00).
Without some planting and grading.

space in the basement for the two playrooms in addition to the manual training room and cooking school and the usual domestic engineering. The available space has in consequence been thrown together, intended as a common playroom. This seems a difficult arrangement to administer, and here has resulted in the playroom being turned over to the girls, the boys being kept outside the building until school time. The playgrounds are separated, being on either side of the building, enclosed with iron railings and planted areas. The school is assured permanent light, as two proposed streets will eventually bound the lot on the long sides, and the corridors and some wardrobes alone will be affected by any building on the adjoining lot to the west. The heating system is low pressure gravity return, with a gravity system for air, with hand control in each room.

THE MATHER SCHOOL.

The Mather School, occupying the north side of the top of Meeting House Hill, is the first and largest of a group of school buildings proposed for this site, the Board aiming to take advantage of what they consider to be the finest location owned by the city for school purposes, and to create eventually a commanding educational group forming an open quadrangle with an unobstructed eastern view. This, the largest grammar school yet built by the Board, is composed of a central block connected with two flanking wings by the stairway and en-

trance halls. The assembly hall occupies the second and third floors of the central block, a gallery opposite the platform connecting the wings on the third floor. Owing to the slope of the land it was possible to get four rooms in the basement of the eastern wing almost wholly above grade. Four rooms in the other wing are available, though with not such perfect light, and can be finished when needed, making the school a thirty-five room school. One of the rooms in the eastern wing is being temporarily used as a cooking school. It is proposed to locate this with manual training rooms, now cared for in another building, in one of the future buildings, so that eventually this school will rate as a thirty-six room school. Almost all the rooms have the relation between schoolroom and wardrobe considered ideal by the Board, only two on each floor being exceptions. A series of shields, with federal, state and civic devices and devices of educational establishments at home and abroad, forms an extremely interesting feature of the ex-

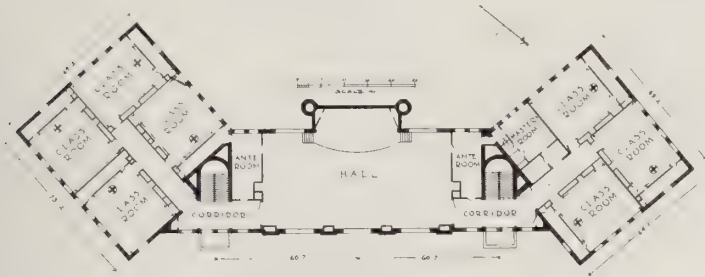
terior. The heating is by a combination pump receiver and gravity return system, the water returning direct to the boilers through a by-pass valve when the pressure is dropped at night, but during school hours being returned by means of a pump. A twelve-foot plenum fan, run by a steam engine, forces the air to the schoolrooms, venti-



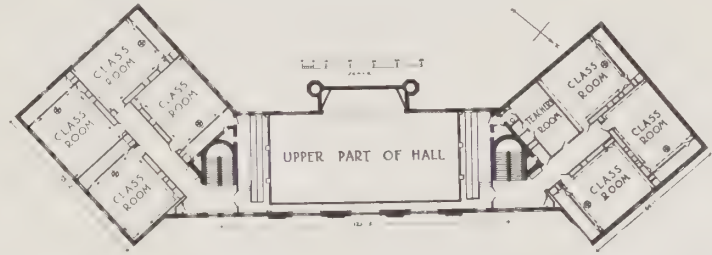
FRONT OF OLIVER WENDELL HOLMES SCHOOL.

lation being stimulated by means of aspirating coils heated by exhaust steam from the engine, which also furnishes the steam for the heating system through a reducing-pressure valve when full pressure is needed for running the fan.

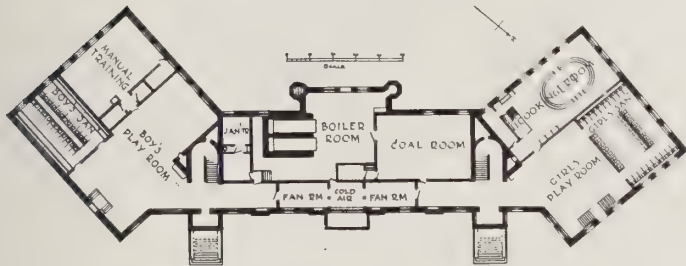
right-angle corner of the lot. The basement of the new building contains the cooking school, the toilets and the heating system, which is similar to that installed in the Mather. The hall, which occupies the second and third stories between the staircases, is of an unusual shape,



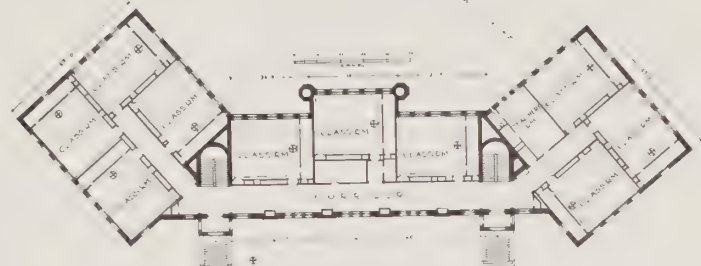
SECOND FLOOR PLAN.



THIRD FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.

(CROSS IN CIRCLE, TEACHER'S DESK. DASH AND DOT, BLACKBOARD.)

PLANS, HOLMES SCHOOL.

THE OLIVER WENDELL HOLMES SCHOOL.

In this school an unconventional plan has been developed on account of an irregular lot, with a large number of fine trees which it was undesirable to sacrifice. The playgrounds occupy the corners of the lot. The old Gibson School building was moved and occupies now the

being very wide and shallow with galleries at either end, but has proved satisfactory.

This is the most economical grammar school yet built by the Board. The figure given as cost is exclusive of some planting which was done later. With this the figure was within \$195,000.



WINDSOR AVENUE ENTRANCE, KENEY PARK, HARTFORD, CONN.
Benjamin Wistar Morris, Jr., Architect.

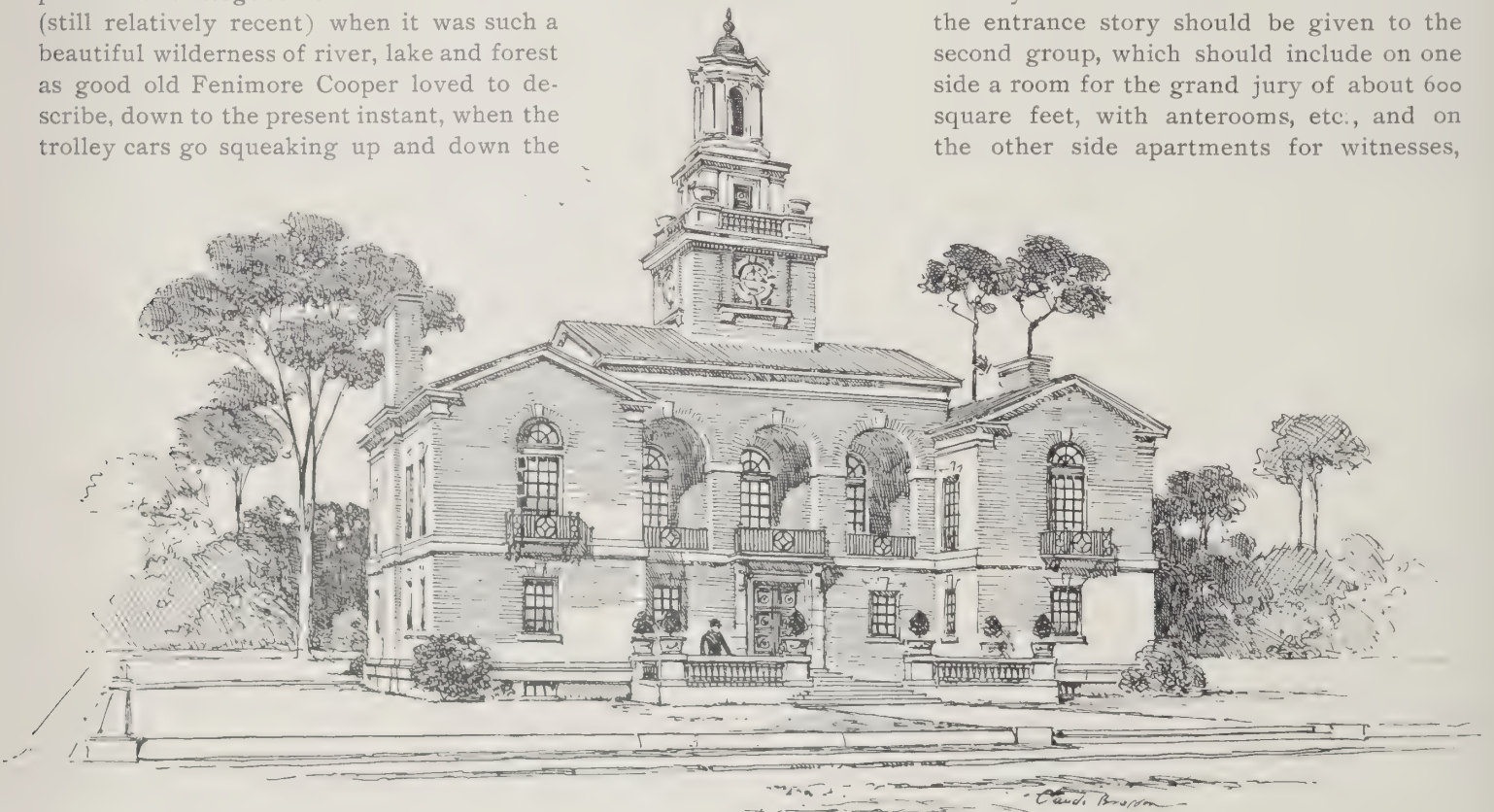
The Village Courthouse. I.

BY CLAUDE BRAGDON.

THIS courthouse, though imaginary, is assumed to occupy, and (I venture to hope) to adorn an actual town, or, since it is not well to be too specific, a composite made up of some half dozen of the featureless towns of central New York. Its architecture, if one may apply that noble word to a thing so ignoble as the half-mile-long double row of stores, churches and houses which face one another across the wide, muddy elm-sheltered main street, has at least the merit of conserving and portraying the various vicissitudes, æsthetic and economic, which the place has undergone almost from the time (still relatively recent) when it was such a beautiful wilderness of river, lake and forest as good old Fenimore Cooper loved to describe, down to the present instant, when the trolley cars go squeaking up and down the

manufacturer. They are enlightened enough to realize that the achievement of beauty must rest with their architect, but in order to assist him on the practical side they will have visited other county seats, interrogated court officers and employees, and in the light of knowledge gleaned in this way, formulated for his guidance the following program:

"The courthouse is to provide accommodation for three distinct groups: first, a courtroom of about 1,200 square feet, with small anterooms for the judge and counsel, with a separate rear entrance. It is suggested that this occupy a separate pavilion in the rear, the height of the courtroom being carried up so as to form a small balcony on the second floor. The balance of the entrance story should be given to the second group, which should include on one side a room for the grand jury of about 600 square feet, with anterooms, etc., and on the other side apartments for witnesses,



A VILLAGE COURTHOUSE. Claude Bragdon, Architect.

old Iroquois trails, and sawdust, sewage and slag, clog and pollute the primeval water courses.

There are a few fine old houses, built in the early years of the last century by the first holders of the land. They are either shabby and neglected, or else (and this is worse) altered out of all semblance of their original form. Though only the work of country builders, their details and proportions have an unmatched felicity, — they are like the rare flowers of an old-fashioned garden overgrown with weeds. One or two pretentious white-pillared porticos mark the period of the Classic revival; after these a deluge of mid-Victorian ugliness. In the names of Mansard and Queen Anne what crimes have here been committed! To complete the enumeration there are a few, a very few, really good modern houses, the first fruits of the revival of taste upon which we are at last entered.

Let us assume, since all is assumption, that the building committee for the new courthouse is composed of those men of the town most competent for such office, a judge, a lawyer, a retired builder, a merchant and a man-

prisoners and the district attorney. There should be an ample lobby in the first floor with two flights of stairs leading to the second story in front portion, which should be given up to the probate court, including a courtroom of about 600 square feet and registry of deeds of about 600 square feet and offices for the registrar and clerks and a small waiting room."

The only other condition imposed is that the building be constructed of burnt clay in some of its forms, since the making of excellent brick and terra cotta are important local industries.

The lot upon which the new courthouse is to stand has a frontage of 250 feet on the main street, and faces the public square, — a rectangle of trampled grass with a jigsaw pagoda used as a band stand at one end, and a firemen's monument at the other. At the invitation of the building committee a well-known firm of landscape architects is already preparing plans for the reclamation and adornment of this square.

Such, then, are the various factors with which the architect of the new courthouse has to deal. One or two



FRONT ELEVATION



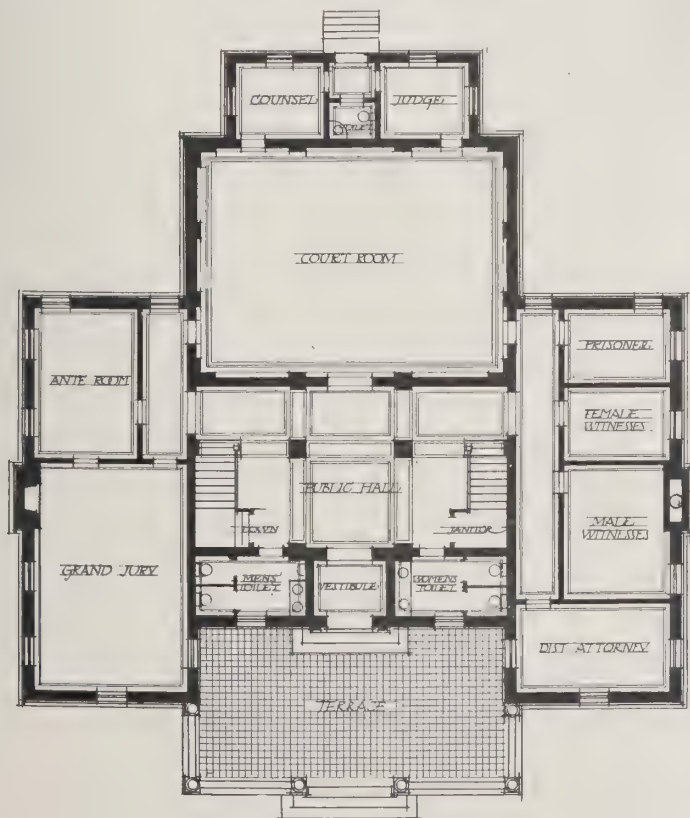
SIDE ELEVATION

ELEVATIONS, A VILLAGE COURTHOUSE.

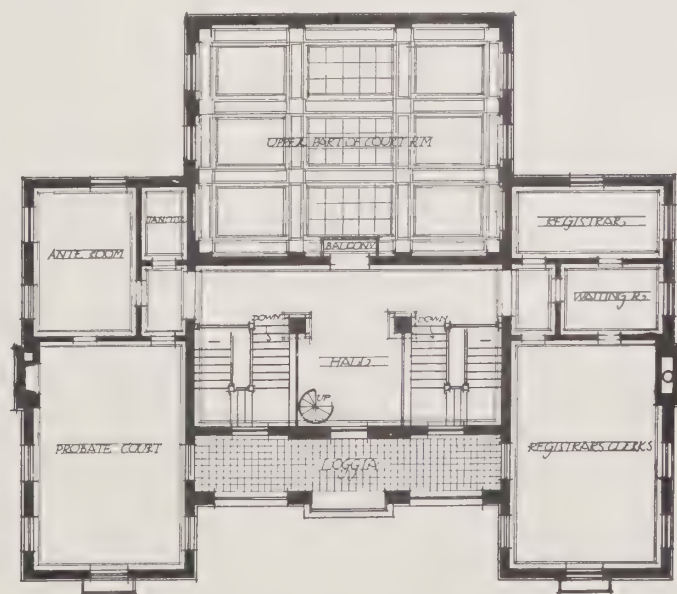
features not called for in the syllabus naturally suggest themselves, a broad-paved terrace, a loggia in the second story overlooking the square, and a clock tower, — all convenient and appropriate adjuncts to a building of this character.

The plan solves itself without difficulty from the requirements, and the plan determines the form (though not the style) of the exterior. There remains unfortunately the question of a choice of style. Unfortunately, I say, because in the great periods of art an architect no more thought of choosing the style in which he essayed to work than the bird should choose the air, or the fish the sea: it was already chosen for him, and he did his

thinking in terms of it. It is clear that the architecturally best things of which the little town can boast are its oldest houses and churches, and it is equally clear that they are irreconcilably at variance with those built later, except, perhaps, with a few of the newest houses of all. These, in a manner, keep them in countenance and recall their faded beauty, like fresh young children who more resemble their grandparents than their parents. Here, then, is a hint for the architect to follow. His courthouse must be the fairest grandchild of them all, resembling the oldest and finest of its elders, without mimicking their decrepitude and low estate. In plain words, the building should be in the Colonial style, recalling the period in which our taste was truest and finest, yet it should not be archaic, but palpitating with the spirit of to-day.



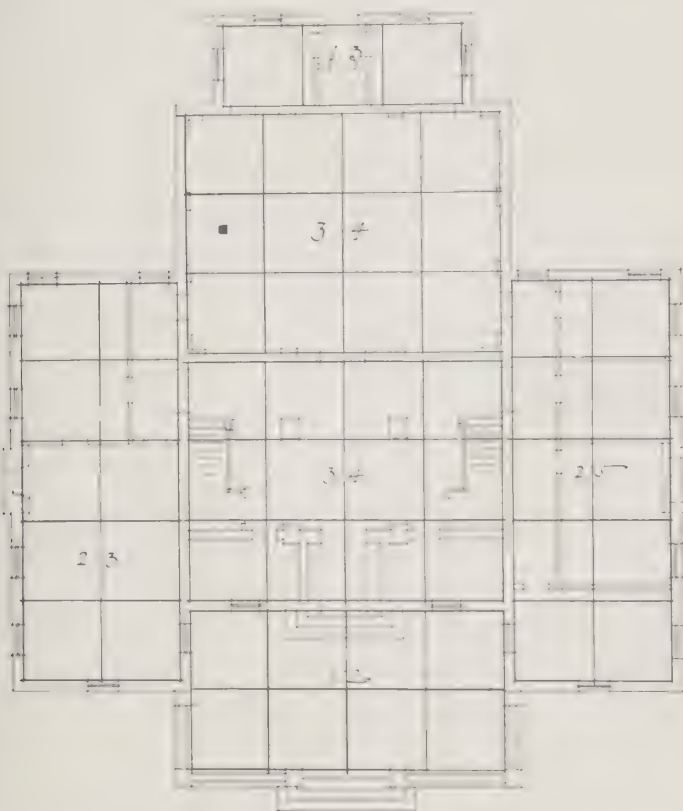
FIRST FLOOR PLAN



SECOND FLOOR PLAN

PLANS, A VILLAGE COURTHOUSE.

The architecture of the Georgian period represents the Renaissance of Jones and Wren in its last gasp, but with all its faults something of the grand manner of an age of taste, of urbanity, of beauty survives in it, and at its best it is characterized by a quiet dignity which we have since failed to achieve, — a dignity arising from a certain justness of proportion of which the builders of that day still possessed the secret, or instinct, and which we appear to have lost. Unlike the secrets of Gothic architecture, cherished by the masonic guilds of the Middle Ages, which were mystical, involved and recondite, the secret of these fine proportions is no very occult matter, since it depends upon the use of simple numerical ratios and of elementary geometrical plane figures. Such aids, intelligently used, particularly in the initial stages of a design, are of great assistance to the architect, however clever he may be; they tend to give his work unity and



coherence, — to make it rhythmical, as it were. And now fairly astride my hobby, let me appear to digress.

We are all of us participators in a world of concrete music, geometry and number, — a world that is of sounds, forms, motions, colors, so mathematically related and co-ordinated that our pygmy bodies equally with the farthest star throb to the music of the spheres. The blood flows rhythmically, the heart its metronome, the moving limbs weave patterns, the voice stirs into radiating sound-waves that pool of silence which we call the air.

"Thou canst not wave thy staff in air,
Or dip thy paddle in the lake,
But it carves the bow of beauty there
And ripples in rhyme the oar forsake."

The whole of animate creation labors under this "beautiful necessity" of being beautiful, and this law of nature is equally a law of art, for art is idealized creation, — nature carried to a higher power by reason of its passage through a human consciousness. Thought and emotion tend to crystallize into forms of beauty as inevitably and according to the same laws as does the frost on

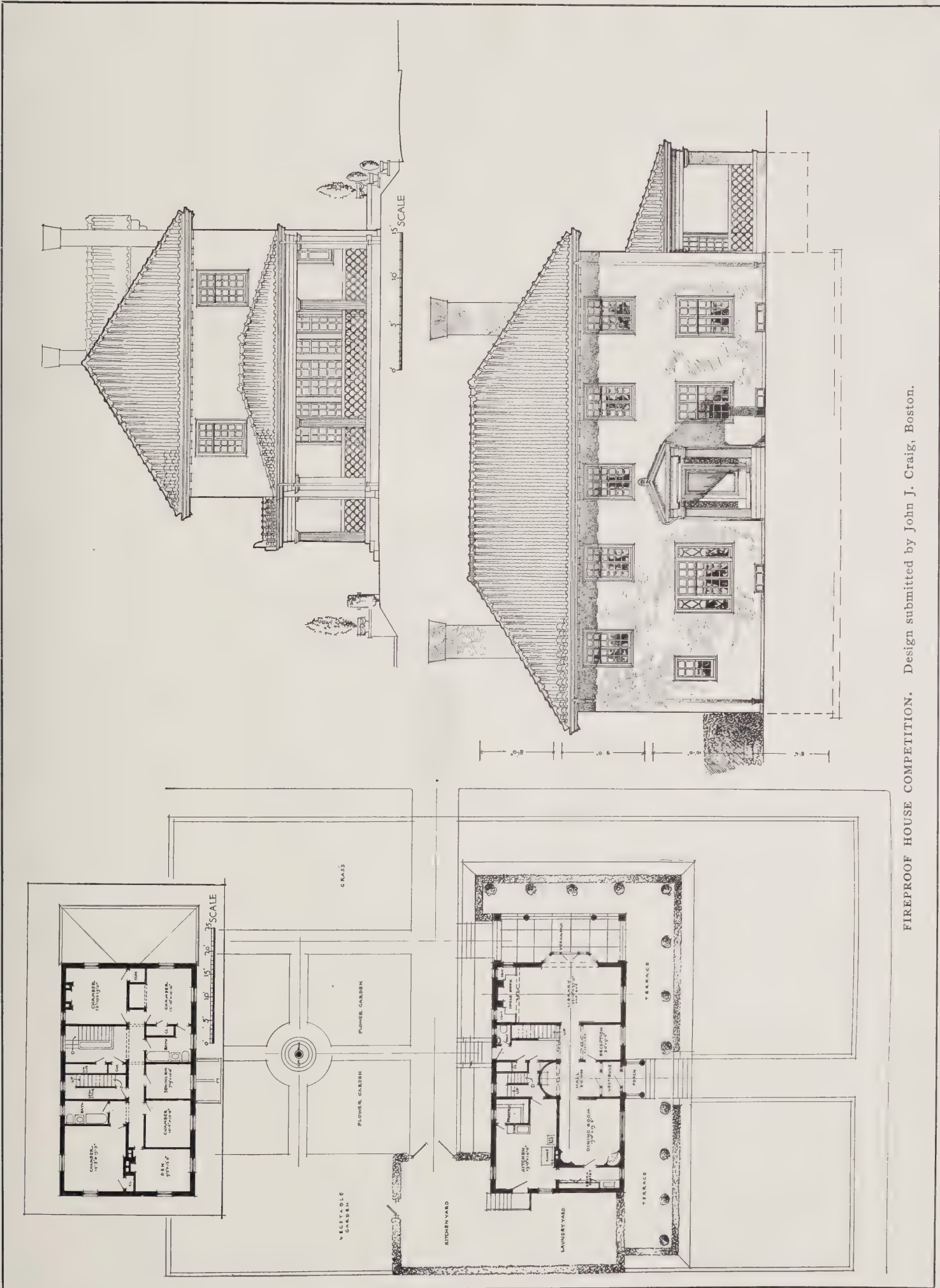
a window pane. Art, therefore, in one of its aspects, is the weaving of a pattern, the communication of an order and method to sounds, syllables, lines, forms, colors, according to certain natural laws; and although it is doubtless true that no masterpiece was ever created solely by the conscious following of set rules, for the artist works unconsciously, instinctively, as the bird sings, or as the bee builds its honey cell, yet an analysis of any masterpiece reveals the fact that its author, like the bird and the bee, followed the rules without knowing them.

Music depends primarily upon the equal and rhythmical division of time, and architecture, no less, upon the equal and rhythmical division of space. Is it not as natural, therefore, — nay, necessary, — to construct one's architectural pattern upon a basis of simple geometrical forms, as that a musical composition be divided into bars and measures?

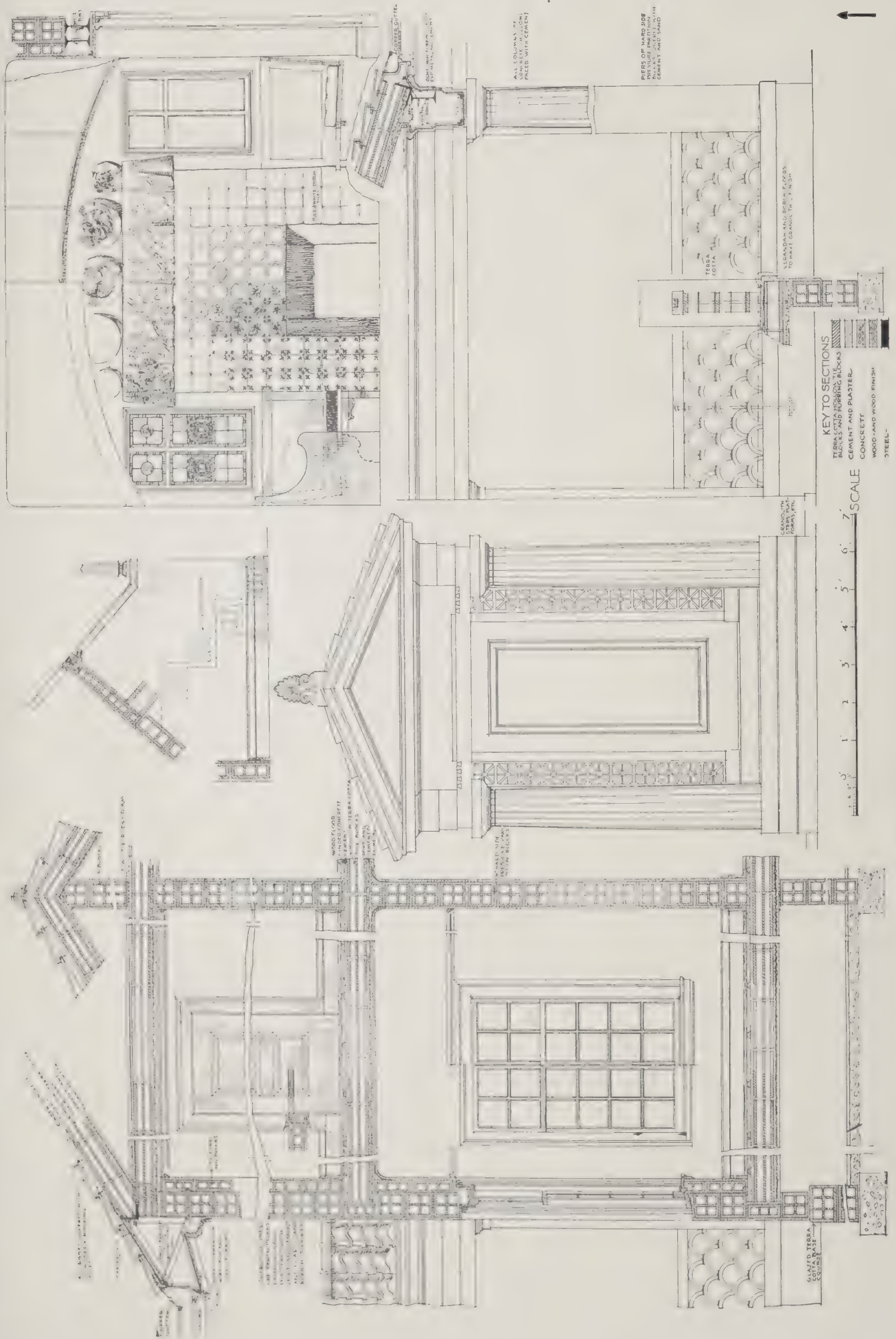


The accompanying diagrams illustrate the application of this principle to the particular case in point. This determination of the plan by squares has the advantage of confining the principle ratios of length and breadth to numbers of relatively small quantity, — ratios, that is, which may not inappropriately be called musical, since all of the principal consonant intervals in music are expressed by ratios of this character: 1:2, the octave, 2:3, the fifth, 3:4, the fourth, and so on. The equilateral triangle, by reason of its peculiar perfection, is useful in determining exterior proportions. It would seem that the eye has an especial fondness for this figure, just as the ear has for certain related sounds. It may be stated as a general rule that whenever three important points in any architectural composition coincide with the three extremities of an equilateral triangle, it makes for beauty of proportion.

It is easy, of course, to exaggerate the importance of these aids to design. The last appeal is necessarily to the eye, and not to a mathematical formula, just as in music the final appeal is to the ear; but some knowledge of this branch of the subject should form part of the equipment of every architectural designer.



FIREPROOF HOUSE COMPETITION. Design submitted by John J. Craig, Boston.



FIREPROOF HOUSE COMPETITION. Details by John J. Craig.

Editorial Comment and Selected Miscellany

BOSTON SCHOOLHOUSE COMMISSION.

FOR the past four years the work of building and repairing the schoolhouses of the city of Boston has been in the hands of a special commission appointed by the mayor. Mr. R. Clipston Sturgis, an architect of the highest professional standing, whose work is known all over the country, has been for most of the time the chairman of this commission, and has been the one who has organized its work, carried out its distinct policy and has assumed the main responsibility for the purely architectural work. The commission has been extremely fortunate in its composition, including, as it has, a builder, Mr. Charles Logue, and a lawyer, Mr. J. J. Corbett, both of whom have worked in thorough sympathy and harmony with Mr. Sturgis in endeavoring to secure for the city of Boston the best results from the standpoint of economy and efficiency.

The work of this commission is now being described in these columns, and it has been of a nature which has won praise from other cities throughout the country, and has gone a long way toward restoring to Boston its relative position in school work as compared with St. Louis, New York and Chicago. The buildings erected by it have been intrusted to architects who were selected entirely according to their professional standing and fitness. The department has been absolutely free from any suspicion of improper practice, and the results accomplished have shown that the city was able to build its schoolhouses of first-class fireproof construction at prices averaging about twenty-two cents per cubic foot, a rate far below what usually obtains in private work, and this with no sacrifice of any practical, æsthetic or hygienic requirements.

The act under which the commissioners were appointed gave the mayor the power of removal for cause at pleasure, and this power was most summarily exercised by Acting Mayor Whelton in the early part of this month by the removal of all the commissioners "for gross and unwarrantable extravagance in the expenditure of public moneys." There was absolutely no justification for such course. The only explanation is that a disgruntled party boss, who had failed of carrying his nominees in the primaries, chose this method of making a final spiteful display of his brief authority, using the commissioners' removal as a salve to his wounded political feelings.

It was a disgrace to Boston that such an action should be possible. The Boston Society of Architects, of which Mr. Sturgis is vice-president, took immediate and prompt action in expressing its sentiments, the Master Builders adopted similar action, and from individuals there has come a protest, which of course passes unheeded over the ears of the expiring party boss.

The Schoolhouse Commission has never been a political body. It has had a public function to perform, and has performed it thoroughly, practically, economically and artistically, with but scant reward for the self-sacrifice and hard work which have been required.

INTERNATIONAL CONGRESS OF ARCHITECTS.

THE Seventh International Congress of Architects will be held in London, July 16 to 21, 1906, under the patronage of His Majesty the King. The following is a list of the subjects which will be discussed:

1. The Execution of Important Government and Municipal Architectural Work by Salaried Officials.
2. Architectural Copyright and the Ownership of Drawings.
3. Steel and Reinforced-Concrete Construction:
 - (a) The general aspect of the subject.
 - (b) With special reference to æsthetic and hygienic considerations in the case of very high buildings.
4. The education of the Public in Architecture.
5. A Statutory Qualification for Architects.
6. The Architect-Craftsman: How far should the Architect receive the theoretical and practical training of a Craftsman?
7. The Planning and Laying-out of Streets and Open Spaces in Cities.
8. Should the Architect have supreme control over other Artists or Craftsmen in the completion of a National or Public Building?
9. The Responsibilities of a Government in the Conservation of National Monuments.

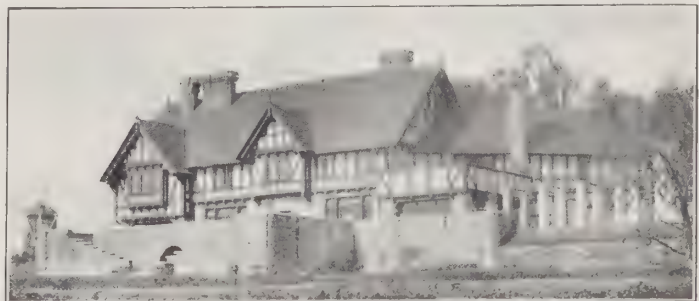
The Executive Committee will be glad to receive papers on any of the above subjects for presentation to the Congress. Papers may be written in English, French or German.



FOUNTAIN IN PRINCE GEORGE HOTEL,
NEW YORK CITY.

Howard Greenley, Architect.

Executed in Faience by Rookwood Pottery Co.



HOUSE AT JENKINTOWN, PA.

Hiss & Weekes, Architects. Roofed with Ludowici Shingle Tile.

Each paper must be accompanied by an abstract of not more than 1,000 words.

Papers and abstracts must reach the Executive Committee before the 30th April, 1906.

All communications to be addressed to the Secretary of the Executive Committee, 9 Conduit Street, London, W.



CANTERBURY HOTEL, BOSTON.

C. E. Park, Architect.

Built of light mottled gray brick made by Columbus Brick and Terra Cotta Company. F. G. Evatt, New England Agent.

The American committee of patronage of this Congress consists of the following persons:

The Honorable the Secretary of State.

The Honorable the Secretary of War.

His Excellency the American Ambassador to Great Britain.

Honorable Francis G. Newlands, U. S. Senator.

John M. Carrère,
Hon. Joseph H. Choate,
Frank Miles Day,
Daniel C. French,
Henry C. Frick,
Cass Gilbert,
John La Farge,
Charles F. McKim,
Francis D. Millet,

J. Pierpont Morgan,
Henry Siddons Mowbray,
Robert S. Peabody,
George B. Post,
Augustus Saint-Gaudens,
James Stillman,
J. Knox Taylor,
Henry Walters,
Prof. W. R. Ware.



ST. LEDGER FLATS, CINCINNATI, OHIO.

Built of "Shawnee" Brick. Ohio Mining and Manf'g Co., Makers.



ENTRANCE TO CREAM OF WHEAT BUILDING, MINNEAPOLIS, MINN.

Harry W. Jones, Architect.

Terra Cotta by American Terra Cotta & Ceramic Co.

The Presidents of the following Societies:

American Institute of Architects.

Architectural League of America.

National Academy of Design.

National Sculpture Society.

Society of American Artists.



HOUSE AT COVINGTON, KY.

Werner, Adkins & Burton, Architects.

Roofed with American "S" Tile, made by Cincinnati Roofing Tile & Terra Cotta Company.

Members *ex-officio*:

Francis R. Allen,
Glenn Brown,

William S. Eames,
William Le Baron Jenney,

George O. Totten, Jr.

The General Permanent Committee of the Congress consists of eighty-six members, eleven from England, fifteen from France, seven from Germany, six from Austria, four from Belgium, two from Canada, three from Denmark, six from Spain, five from the United States, seven from Italy, three from Mexico, three from Netherlands, four from Portugal, four from Russia, three from Sweden, three from Switzerland, and one from Turkey.

ISLE DE LA CITÉ.

A CERTAIN large eastern city, not a thousand miles from where this journal is published, has, facing its



DETAIL BY C. E. CASSELL & SON, ARCHITECTS.
Conkling-Armstrong Terra Cotta Company, Makers.

most choice residential portion and separating it from an academic neighbor, a vast expanse of tidal river, measuring something like a third of a mile across. An architect, whose name has been coupled with some of the most interesting work of recent years, has conceived the most delightful scheme of creating an island in the center of this expanse, and upon one end of the island erecting a large monumental cathedral, upon the other grouping the public buildings having to do with the Metropolitan dis-



HEIGHTS CASINO, BROOKLYN, N. Y.

William A. Boring, Architect.

Built of a red "stretcher" brick made by Sayre & Fisher Co.

trict, and connecting this island to the main land on each side by a monumental bridge. The spirit of imaginative romance is not gone from our national architecture. Rather it is coming back. And little chance as there is of this delightful scheme being fully realized, its serious consideration is one of the day dreams which can add to the delight of architecture and which, even in its inception, shows how our municipalities may one day be able to utilize the natural advantages of site and surroundings.



DETAIL BY HENRY IVES COBB, ARCHITECT.
Standard Terra Cotta Works, Makers.



METHODIST EPISCOPAL CHURCH, BEAVER, PA.

Hodgens & Burns, Architects.

Terra Cotta made by Excelsior Terra Cotta Company.

BUILDING OPERATIONS FOR NOVEMBER.

OFFICIAL reports of building construction in some fifty leading cities throughout the country, compiled by *The American Contractor*, indicate that the building industry is in a flourishing condition and in somewhat greater volume than in November, 1904. While about a dozen cities of the fifty show a decrease compared with November, 1904, the balance show a decided gain, running as high as 449 per cent in Omaha. A general average through the entire list presents a very favorable aspect. Among the cities most conspicuous for increased building construction are: Baltimore, 24 per cent; Buffalo, 38; Chattanooga, 383; Cincinnati, 66; Davenport, 104; Denver, 223; Detroit, 34; Duluth, 61; Harrisburg, 26; Indianapolis, 78; Jersey City, 110; Louisville, 82; Manchester, 152; Milwaukee, 41; Mobile, 84; Newark, 43; New York, 30; Philadelphia, 71; Pittsburg, 43; St. Louis, 76; St. Paul, 131; San Francisco, 33; Scranton, 105; Seattle, 27; Spokane, 113; South Bend, 142; Topeka, 50; Terre Haute, 56; Washington, 152; Worcester, 174; Wilkesbarre, 281. The figures from Denver, Los Angeles, San Francisco, Pittsburg, Washington, and especially of St. Louis, show an extraordinary building activity, considering the population involved. Denver scored the heaviest building of any month in many



DETAIL BY NEW JERSEY
TERRA COTTA CO.



DETAIL BY GEORGE KRAMER THOMPSON,
ARCHITECT.
New York Terra Cotta Company, Makers.

turers' Association and the Eighth Yearly Meeting of the American Ceramic Society are to be held at Philadelphia, Pa., February 5 to 17, 1906.

Samuel A. Brouse, architect, First National Bank Building, Trenton, N. J., desires manufacturers' catalogues and samples.



DETAIL BY WILLIAM T. FANNING, ARCHITECT.
Brick, Terra Cotta and Tile Company, Makers.

The American Society for Testing Materials will devote its energies for the present to a series of tests of fireproof floors.



DETAIL BY RICHARD E. SCHMIDT, ARCHITECT.
Northwestern Terra Cotta Company, Makers.

years. Thus far building and construction have been satisfactory, and there is no sign of a let-up in the near future.

IN GENERAL.

Prof. W. H. Goodyear has been elected an honorary member of the Edinburgh Architectural Society.

The Twentieth Annual Convention of the National Brick Manufac-

same, with the hope of drawing forth suggestions and criticism from all who may be interested.

It is the desire of the committee to make the record of past tests as complete as possible, and it will greatly appreciate the kindness of those who may possess such information if they will forward the same to Prof. Ira H. Woolson, Columbia College, New York City.

The Standard system of hollow tile fireproofing, manufactured by the National Fireproofing Company, will be used in the following new buildings in New York City: Chemical National Bank, Trowbridge & Livingston, architects; Laflin Store, Hale & Rogers, architects; U. S. Express Company's Building, Clinton & Russell, architects; Loft Building for Hoffman Estate, J. B. Snook & Sons, architects.



DETAIL BY CODMAN & DESPRADELLE,
ARCHITECTS.
Atlantic Terra Cotta Company, Makers.



TYMPANUM PANEL, SEMINARY OF THE REDEMPTORIST FATHERS,
ESOPUS, N. Y.
Executed in Terra Cotta by Perth Amboy Terra Cotta Company.
F. J. Untersee, Architect.

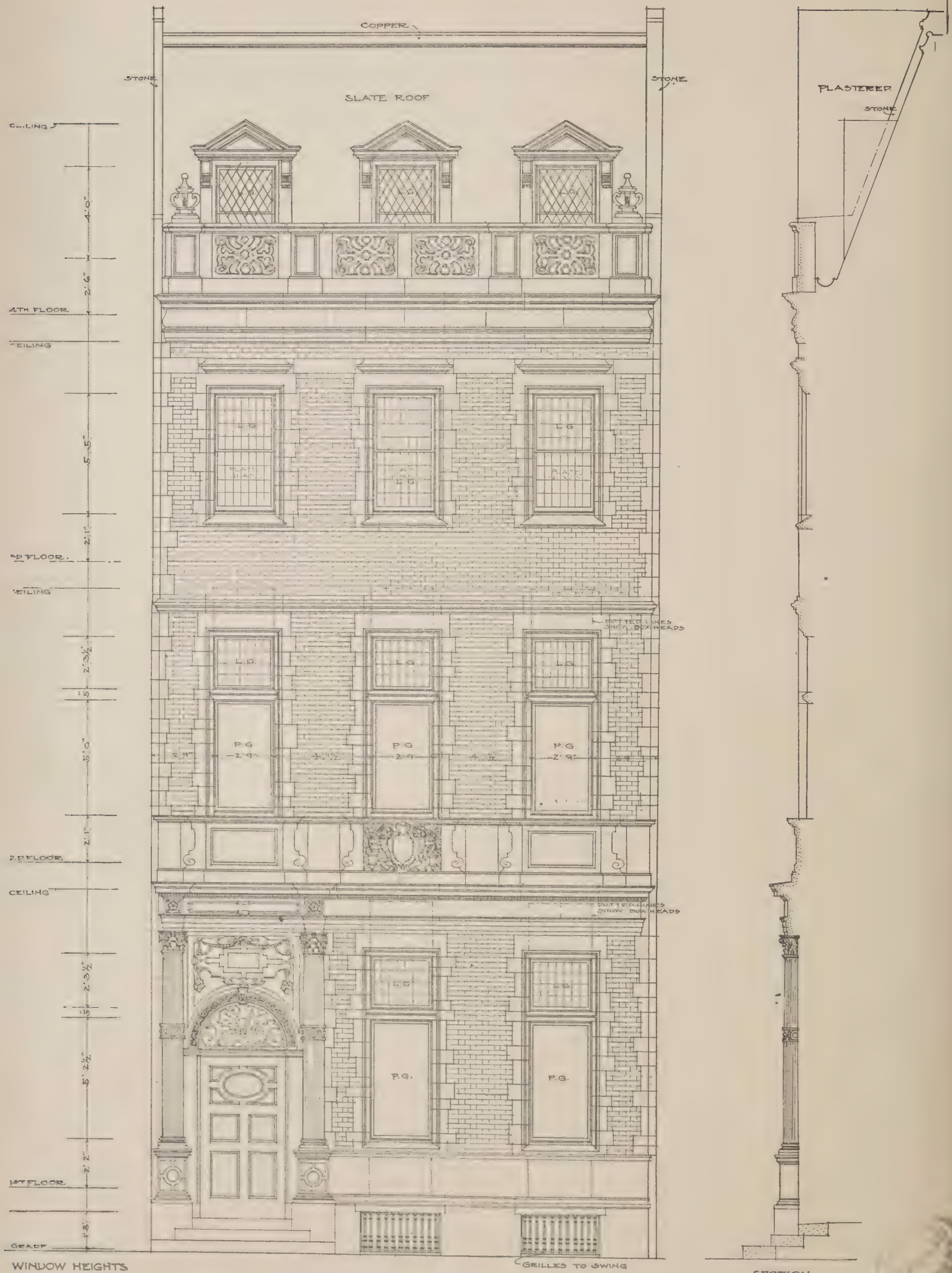
BRICK AGENCY WANTED—Sales agency in New England wanted with reliable manufacturer for face brick in all shades. Address "Agency," care of "The Brickbuilder."

WANTED—Position as draughtsman in any eastern or middle west city. Have had a thorough office training, including superintendence and a special course at college. Can furnish first-class reference; age 32. Address "Buffalo," care of "The Brickbuilder."

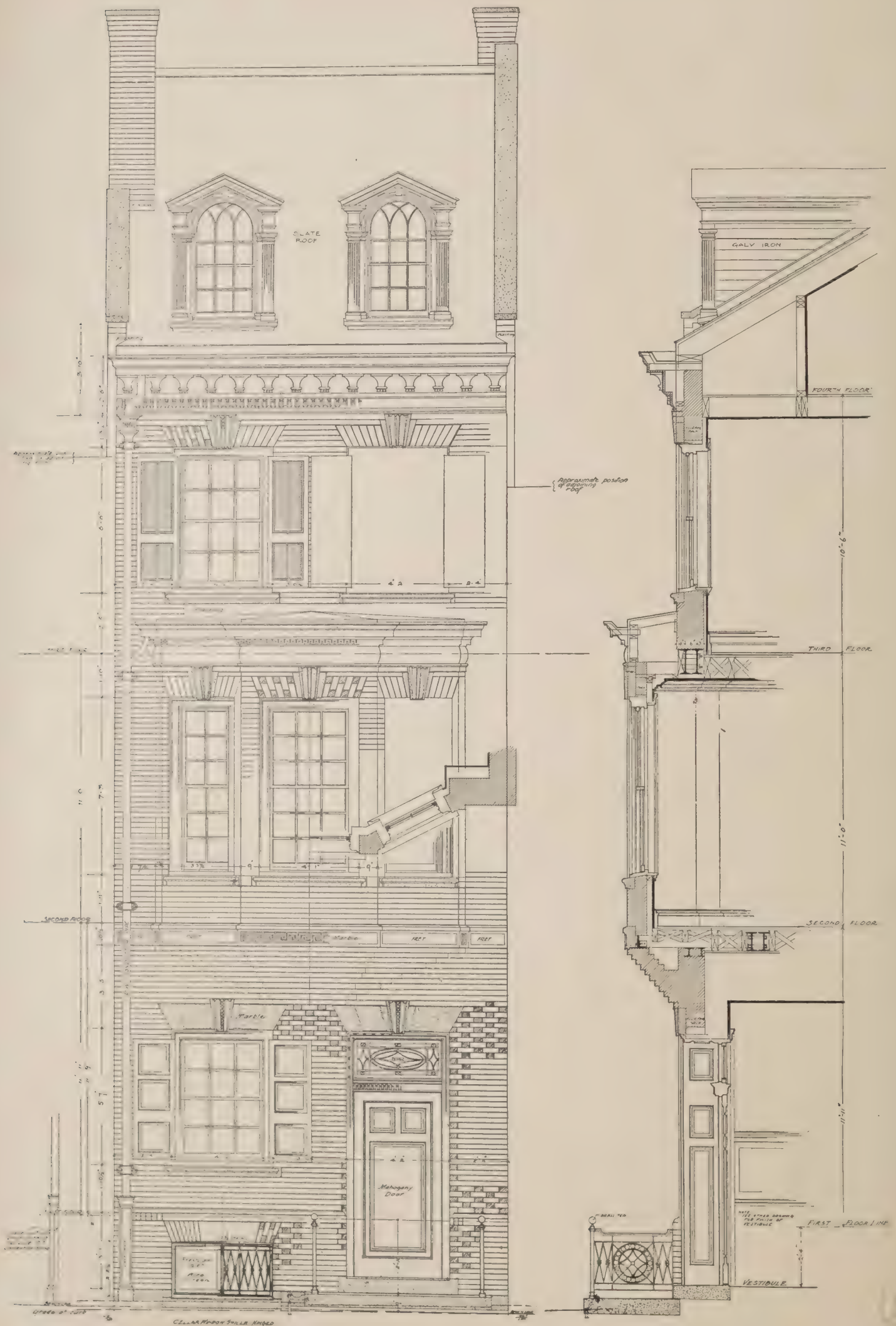
THE BRICKBUILDER.

VOL. 14. NO. 1.

PLATE 1.

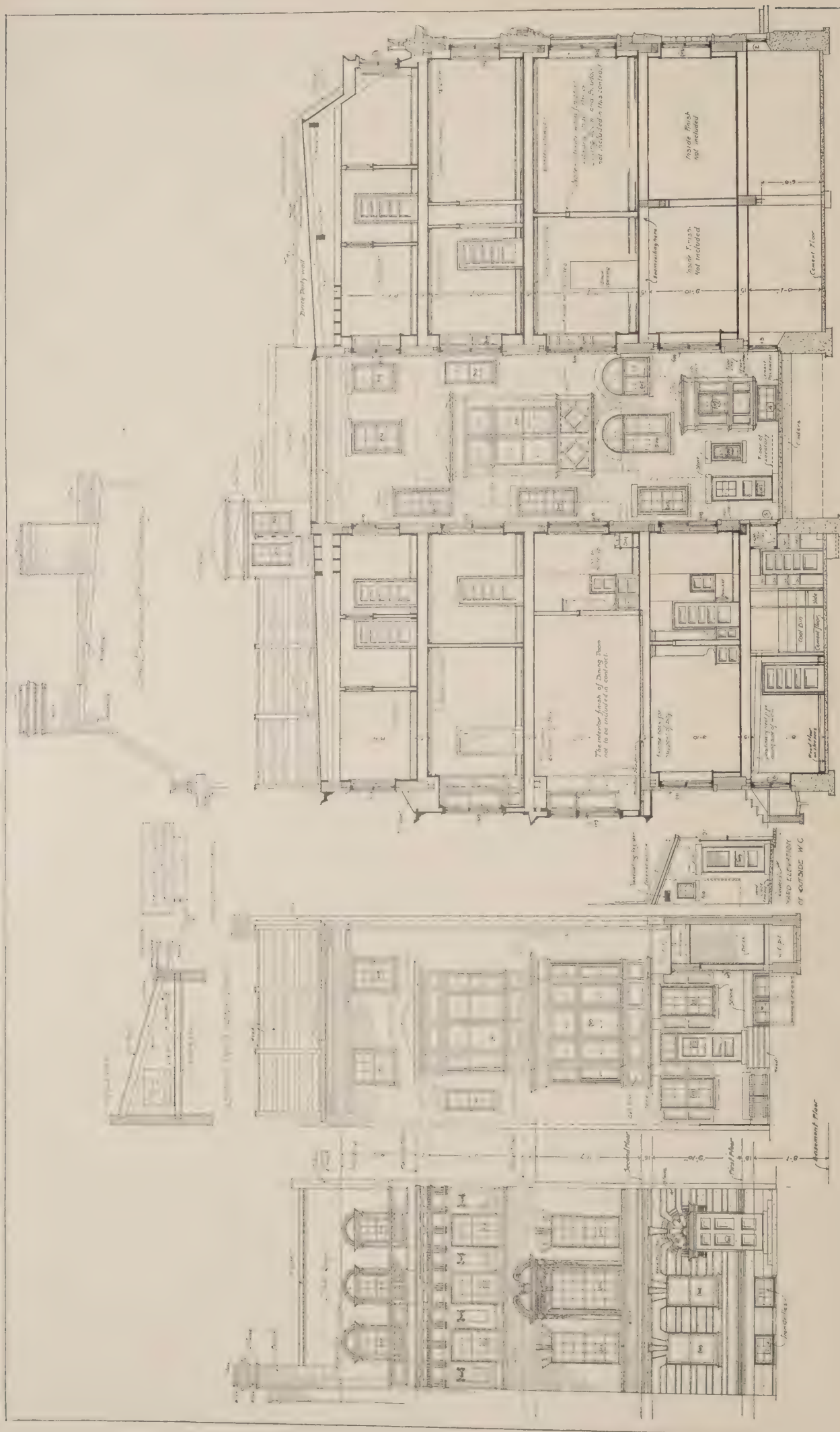


HOUSE, 1509 WALNUT STREET, PHILADELPHIA, PA.
NEWMAN & HARRIS, ARCHITECTS.

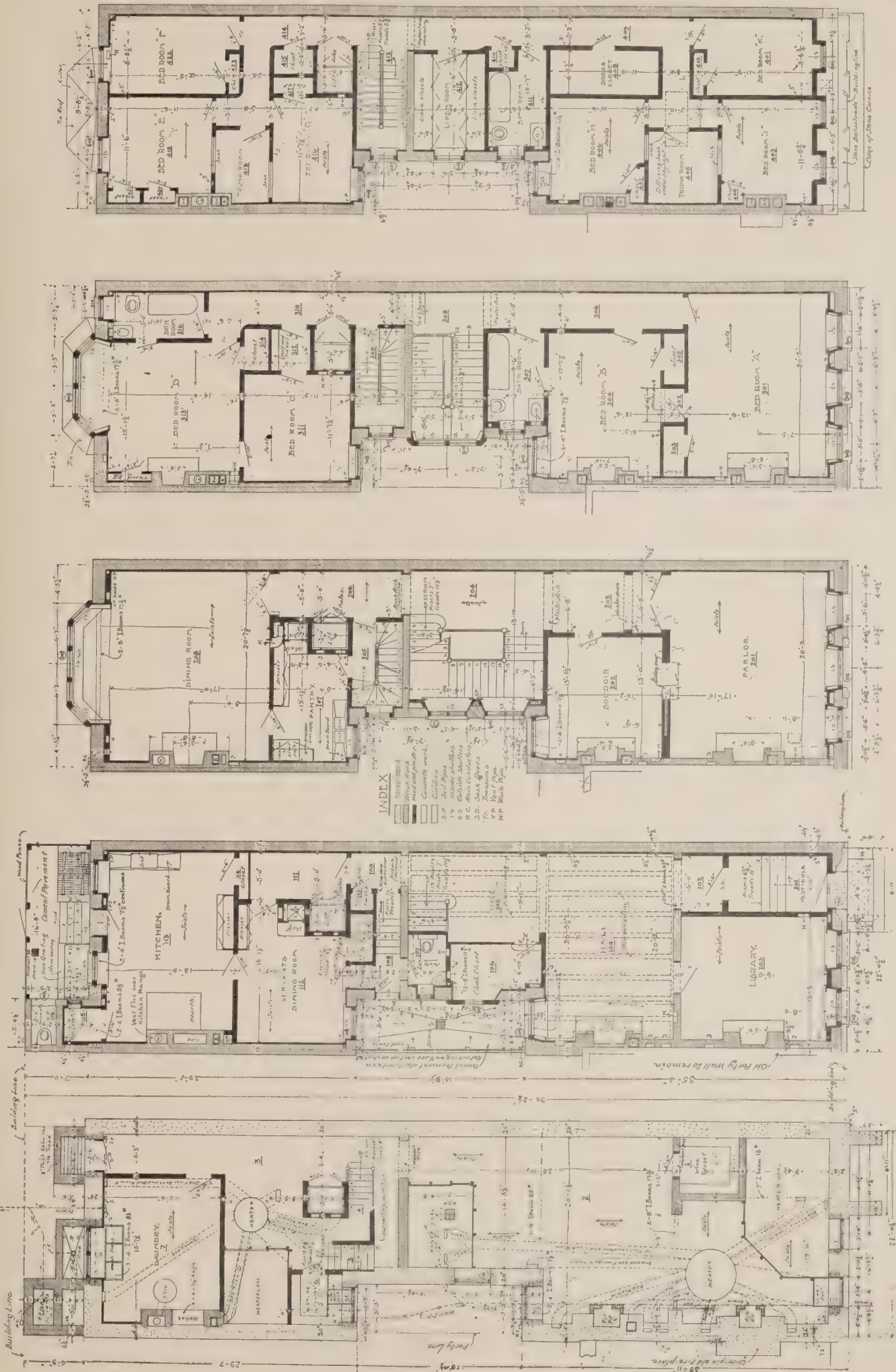


HOUSE, 2042 LOCUST STREET, PHILADELPHIA, PA.

EDGAR V. SEELER, ARCHITECT.



HOUSE, 1720 LOCUST STREET, PHILADELPHIA, PA.
COPE & STEWARDSON, ARCHITECTS.



FOURTH FLOOR PLAN.

THIRD FLOOR PLAN.

SECOND FLOOR PLAN

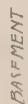
FIRST FLOOR PLAN

BASEMENT PLAN.

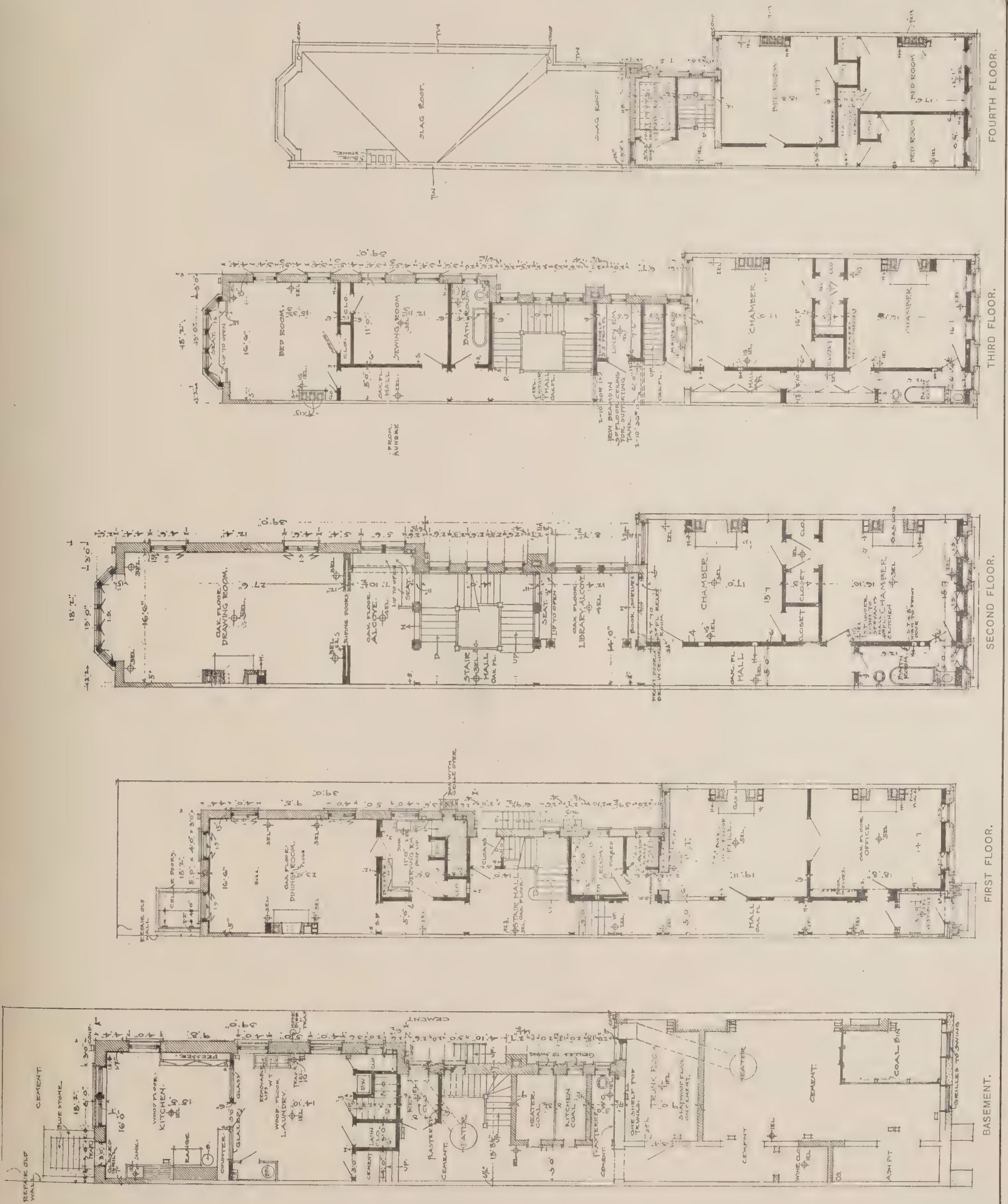
PLANS, HOUSE 1720 LOCUST STREET, PHILADELPHIA, PA.

COPE & STEWARDSON, ARCHITECTS.

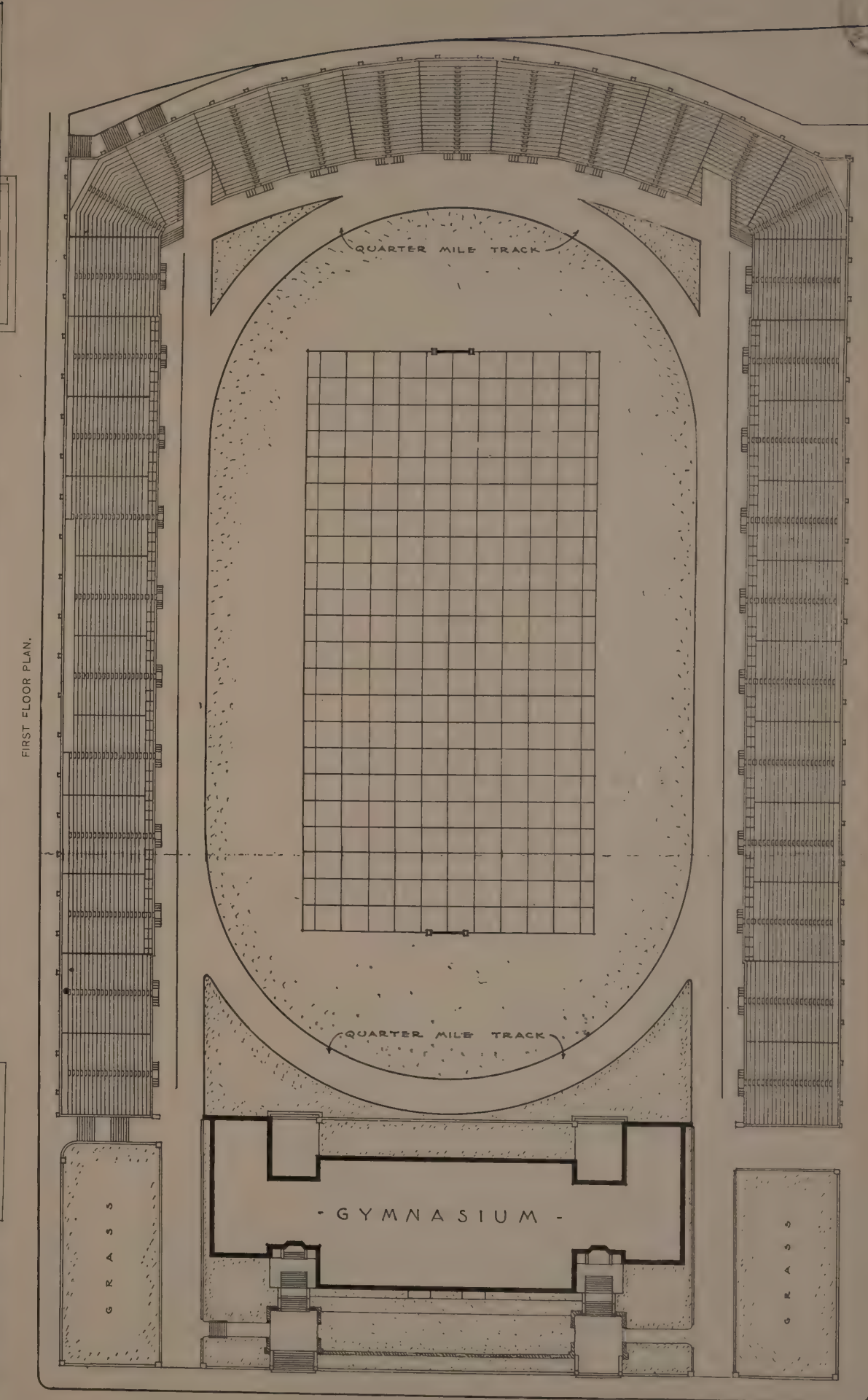
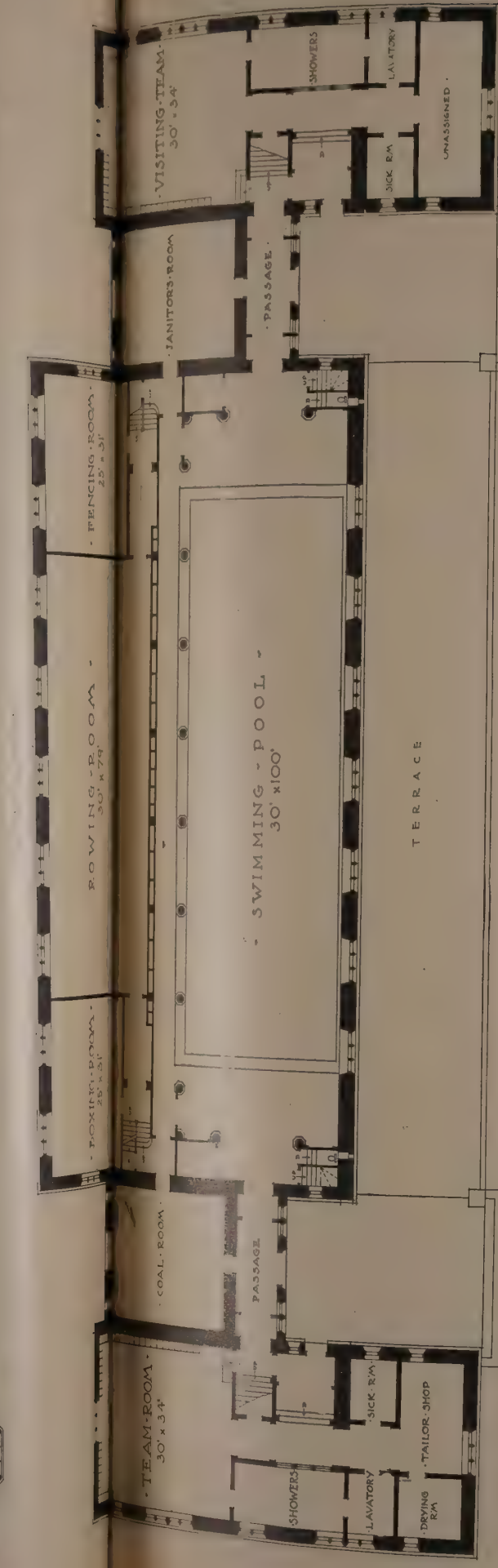
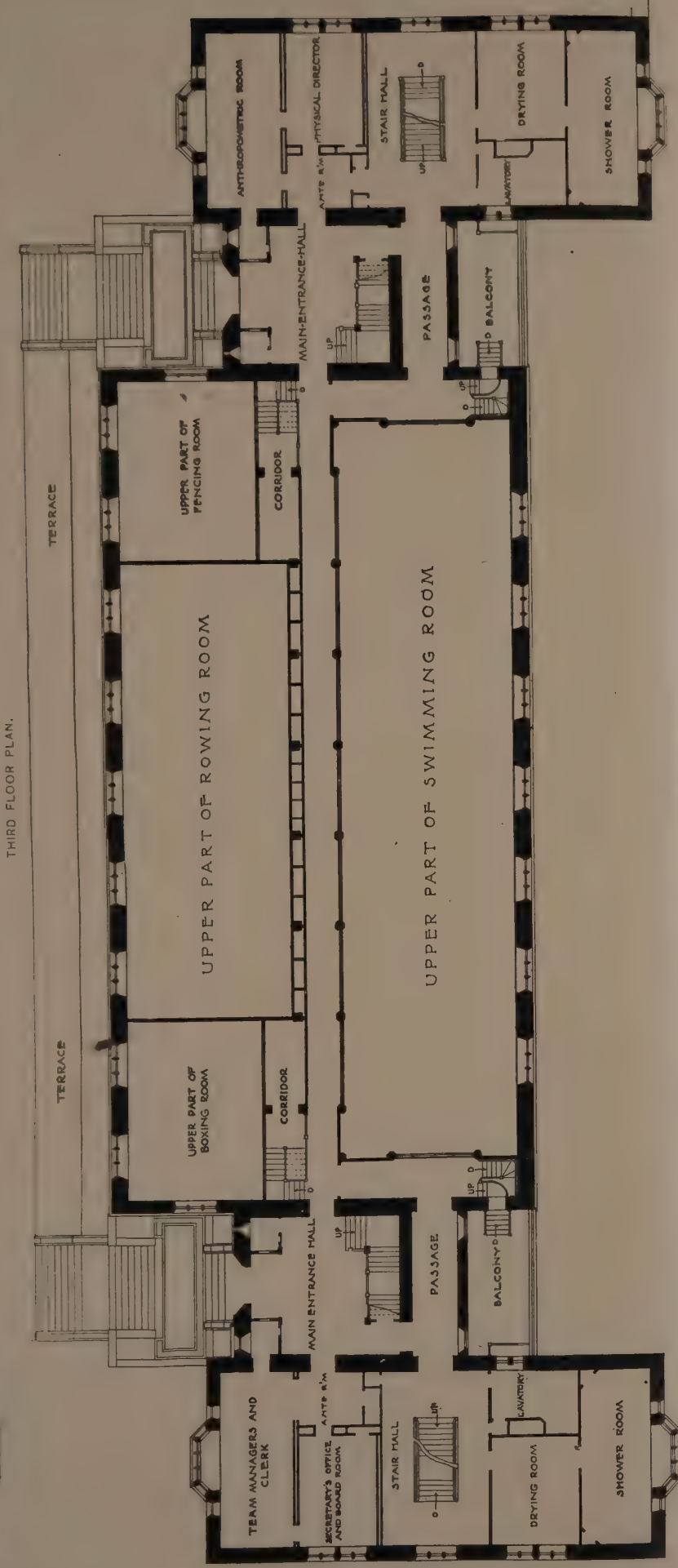
PLATE 4.



EDGAR V. SEELE, ARCHITECT.



PLANS, HOUSE, 1509 WALNUT STREET, PHILADELPHIA, PA.
NEWMAN & HARRIS, ARCHITECTS.





FROM THE FIELD.

GYMNASIUM, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA.

FRANK MILES DAY & BROTHER, ARCHITECTS.



2042 LOCUST STREET.

E. V. SEELE, ARCHITECT.

HOUSES AT PHILADELPHIA, PA.



12047 CHESTNUT STREET.

WILSON EYRE, ARCHITECT.

■ ■ ■ ■ ■

THE BRICKBUILDER,
JANUARY,
1905.



ADDITION TO THE HOTEL IMPERIAL, NEW YORK CITY.

(TALLEST BUILDING OF THE BLOCK.)

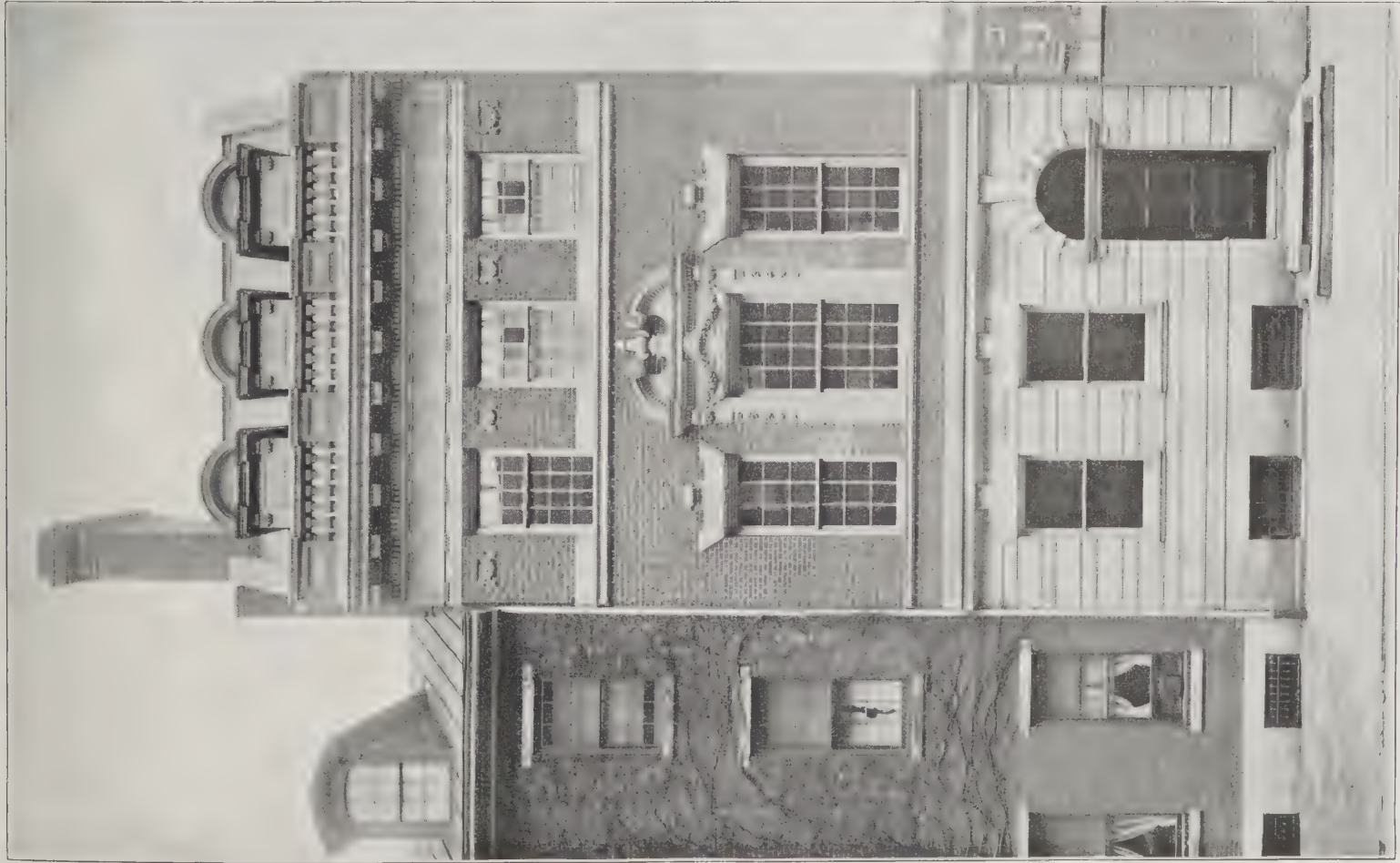
WARREN & WETMORE, ARCHITECTS.

THE BRICKBUILDER,
JANUARY,
1905.



INTERIOR, ST. IGNATIUS EPISCOPAL CHURCH, WEST END AVENUE, NEW YORK CITY.

CHARLES C. HAIGHT ARCHITECT.



1720 LOCUST STREET.
COPE & STEWARDSON, ARCHITECTS.



1509 WALNUT STREET.
NEWMAN & HARRIS, ARCHITECTS.

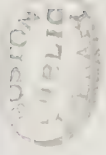
HOUSES AT PHILADELPHIA, PA.



FRONT VIEW.

GYMNASIUM, UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PA.

FRANK MILES DAY & BROTHER, ARCHITECTS.



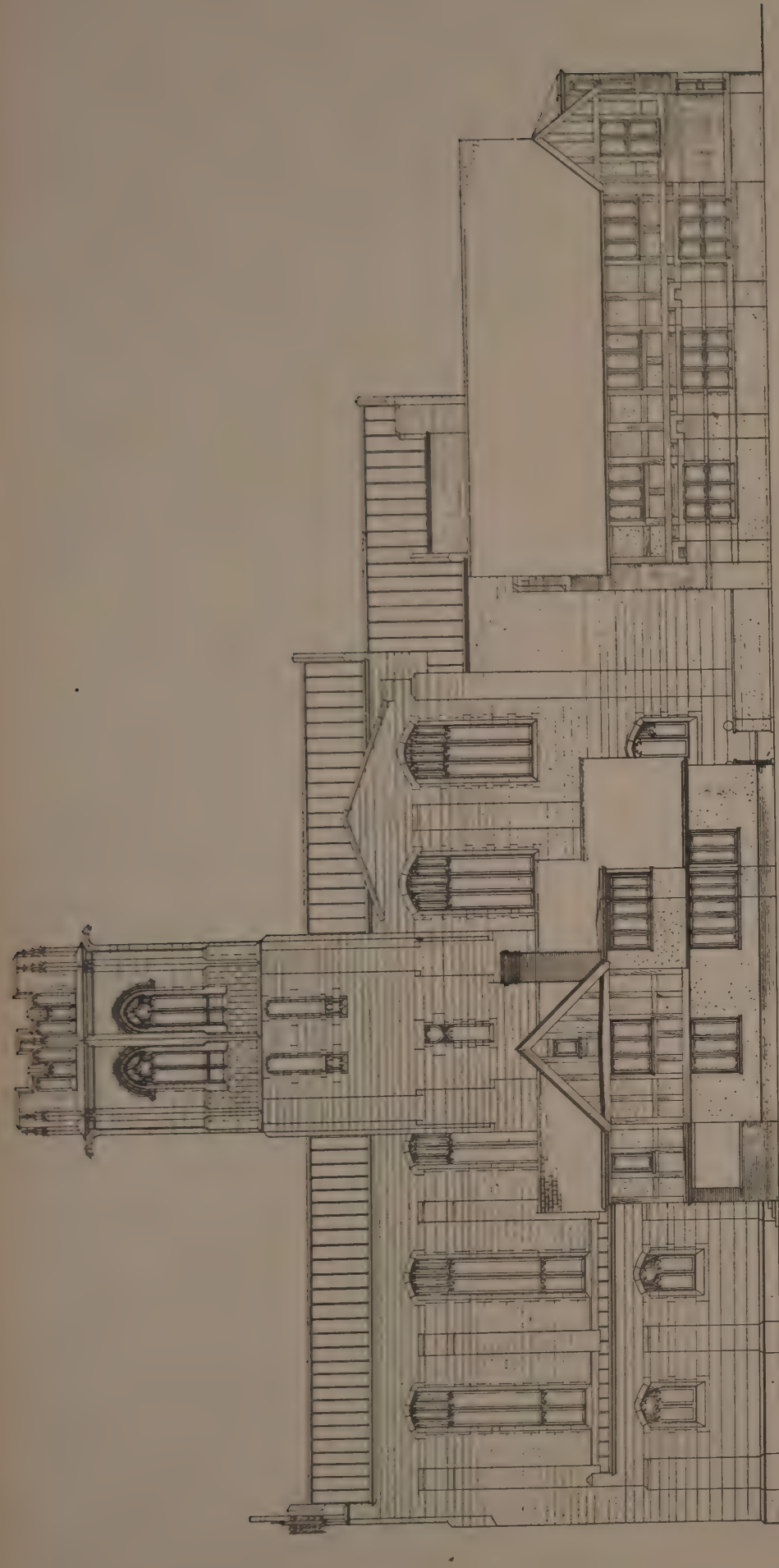


HOUSE AT MT. KISCO, N. Y.

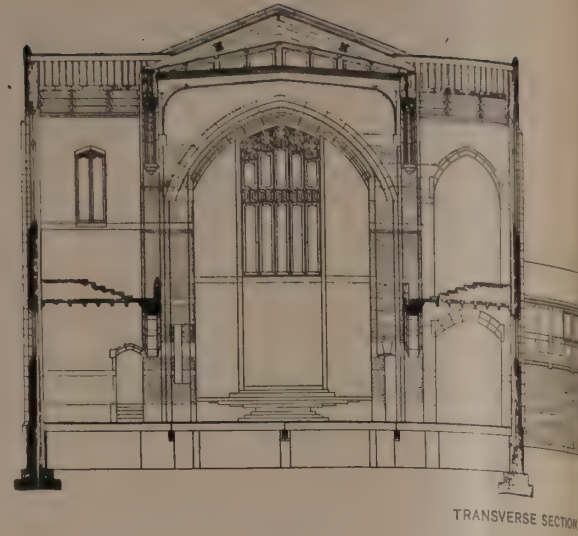
L. HENRY MORGAN, JOHN GALEN HOWARD AND D. EVERETT WAID, ARCHITECTS.



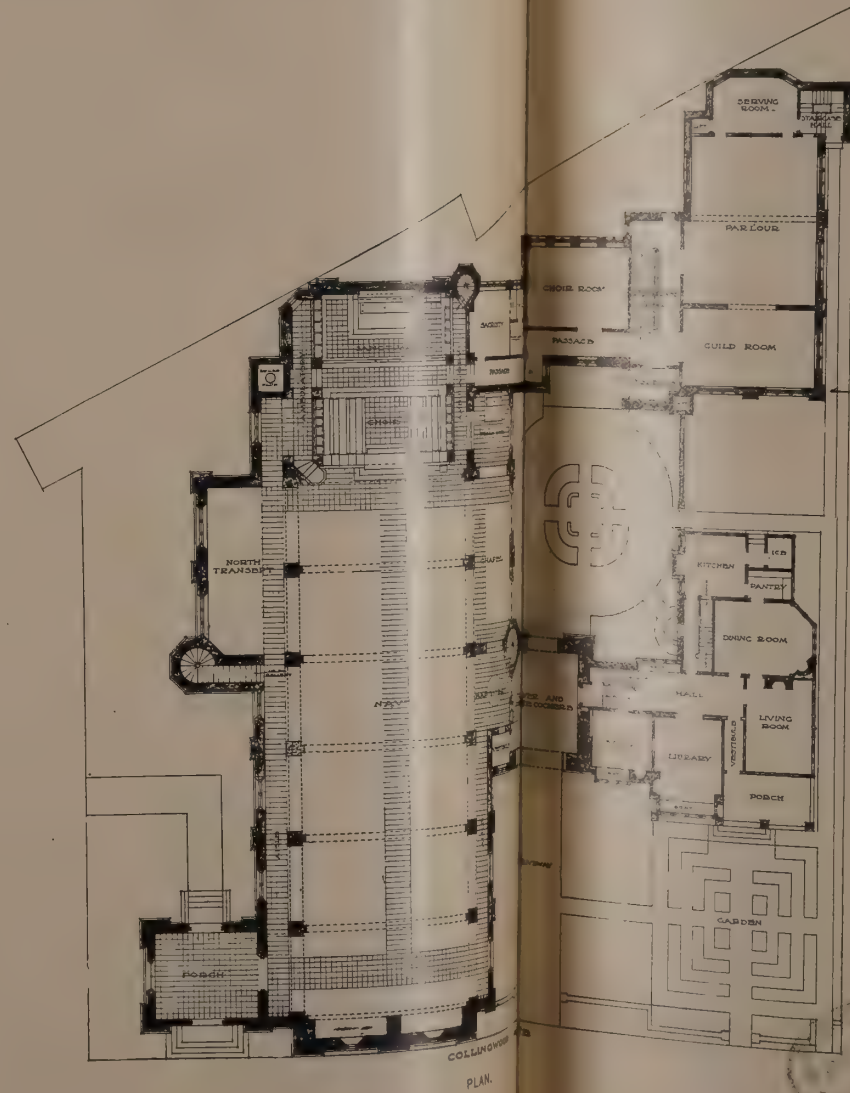
HOUSE AT CANTON, ILL.
ROBERT C. SPENCER, JR., ARCHITECT.



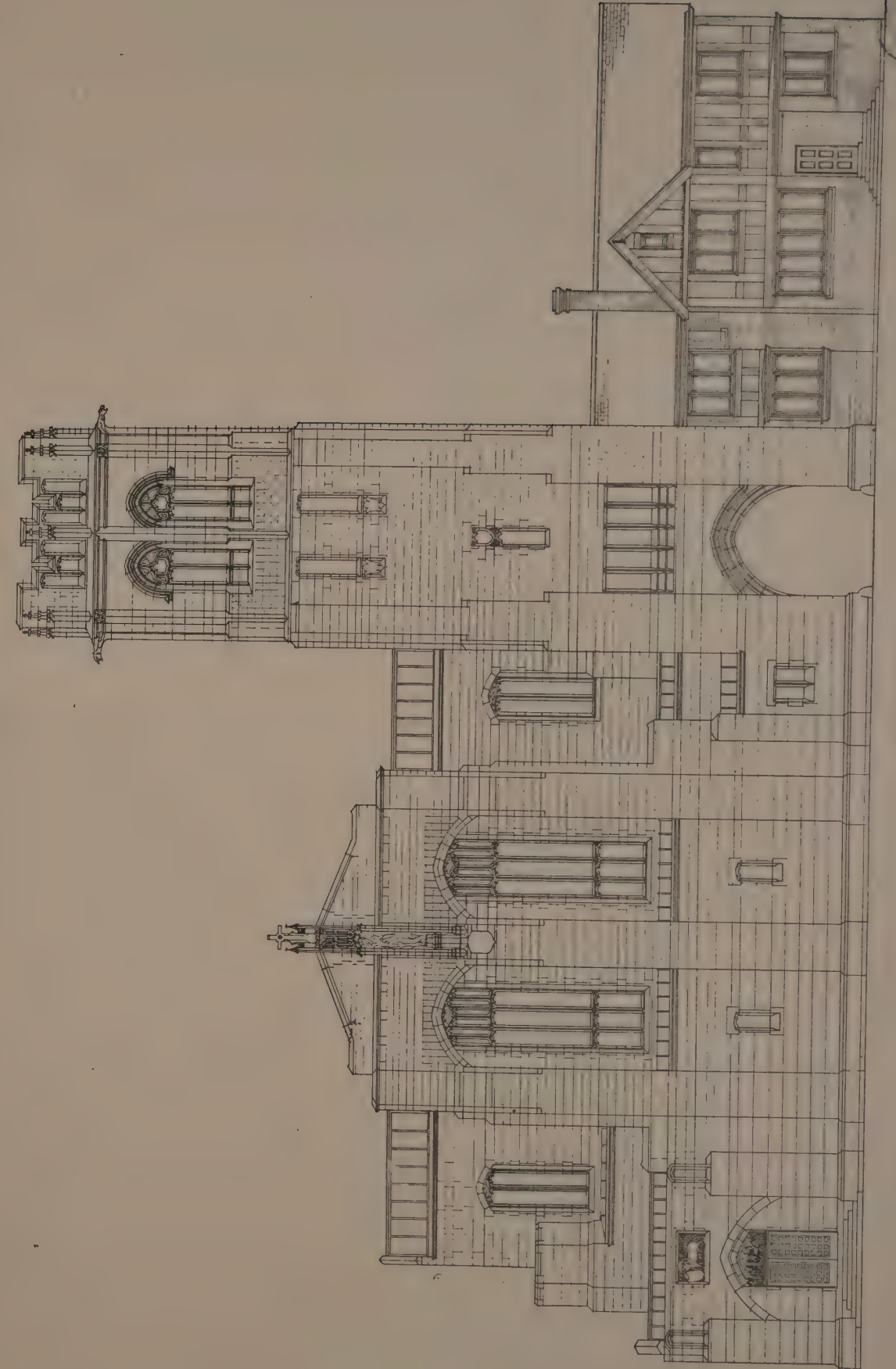
SIDE ELEVATION.



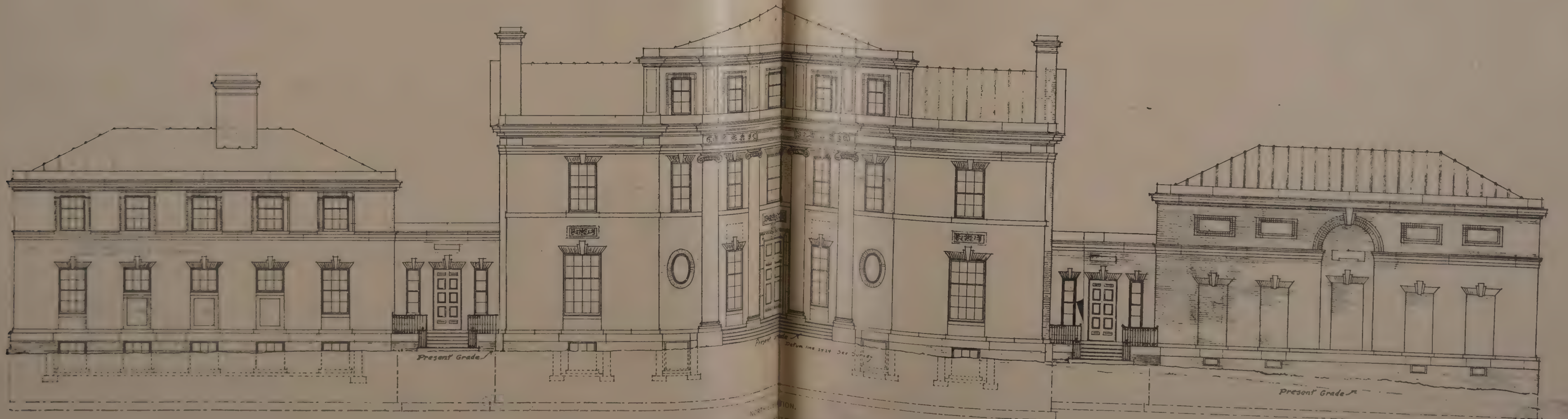
TRANSVERSE SECTION.



PLAN.



FRONT ELEVATION.

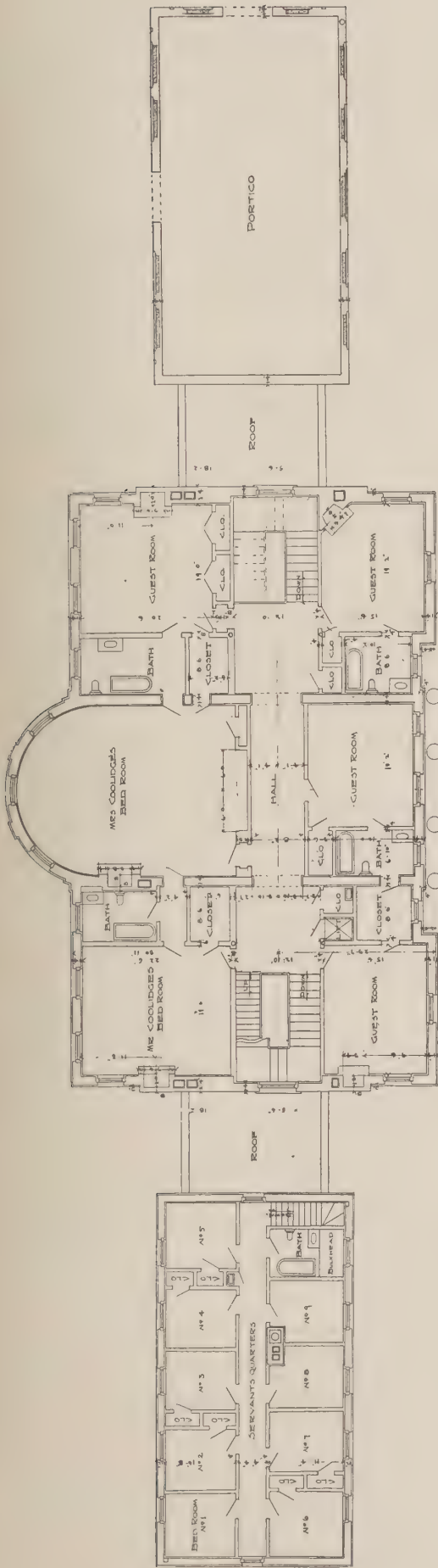


ELEVATIONS, HOUSE FOR T. JEFFERSON BRIDGE, JR., ESQ. AT MANCHESTER, MASS.
MORRIS, MEAD & BROWN, ARCHT. TRUSTEES.

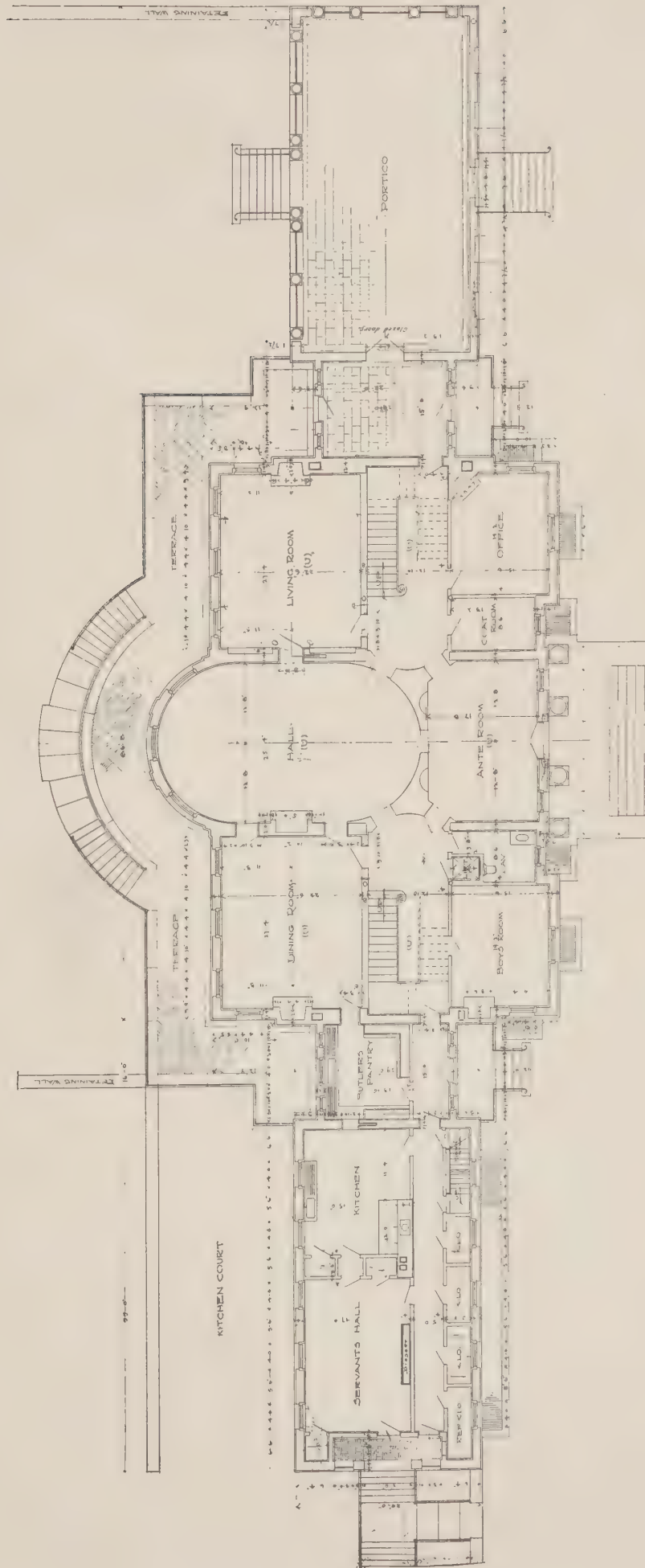
PLATE 13.



ROBERT C. SPENCER, JR., ARCHITECT.

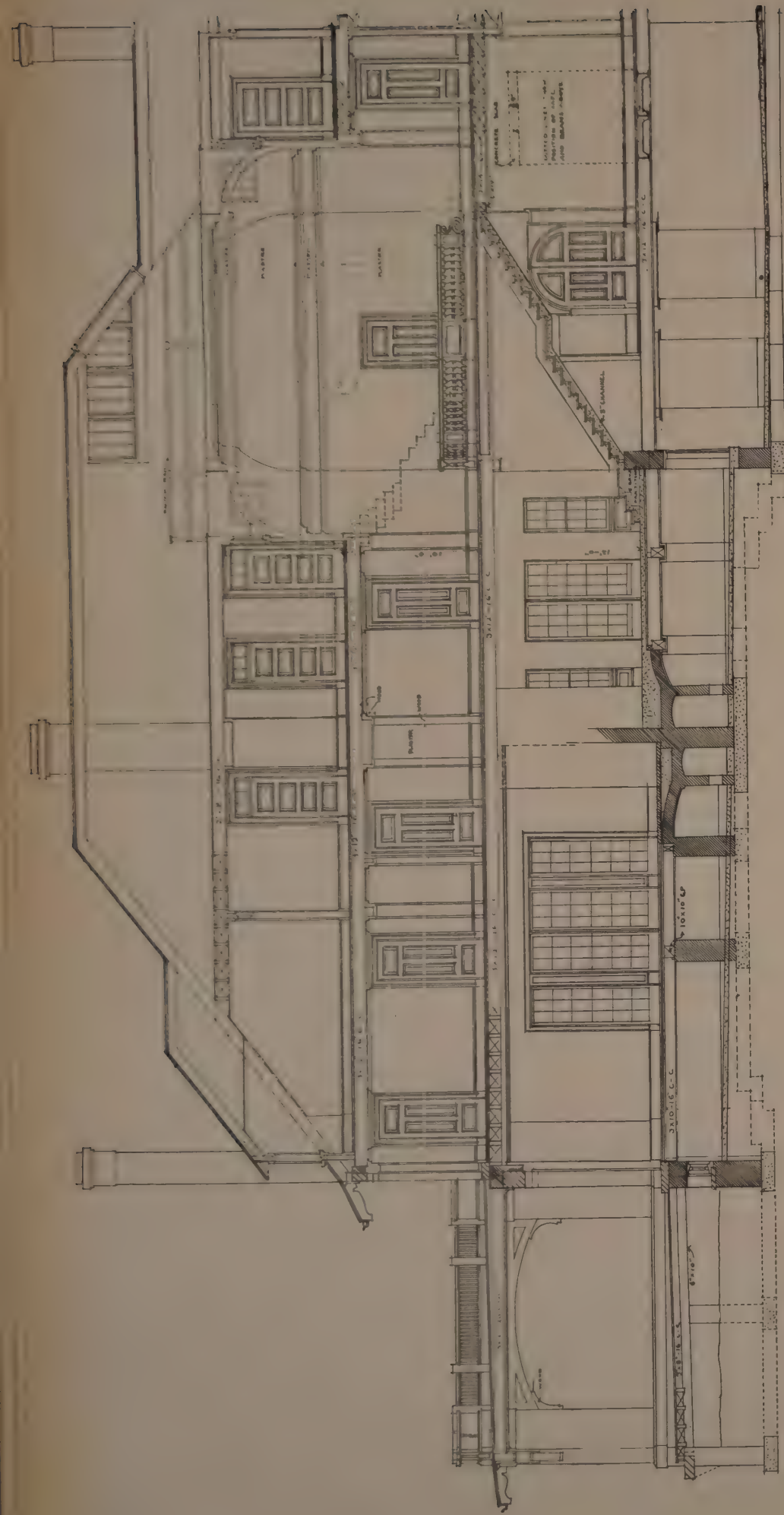


SECOND FLOOR PLAN.

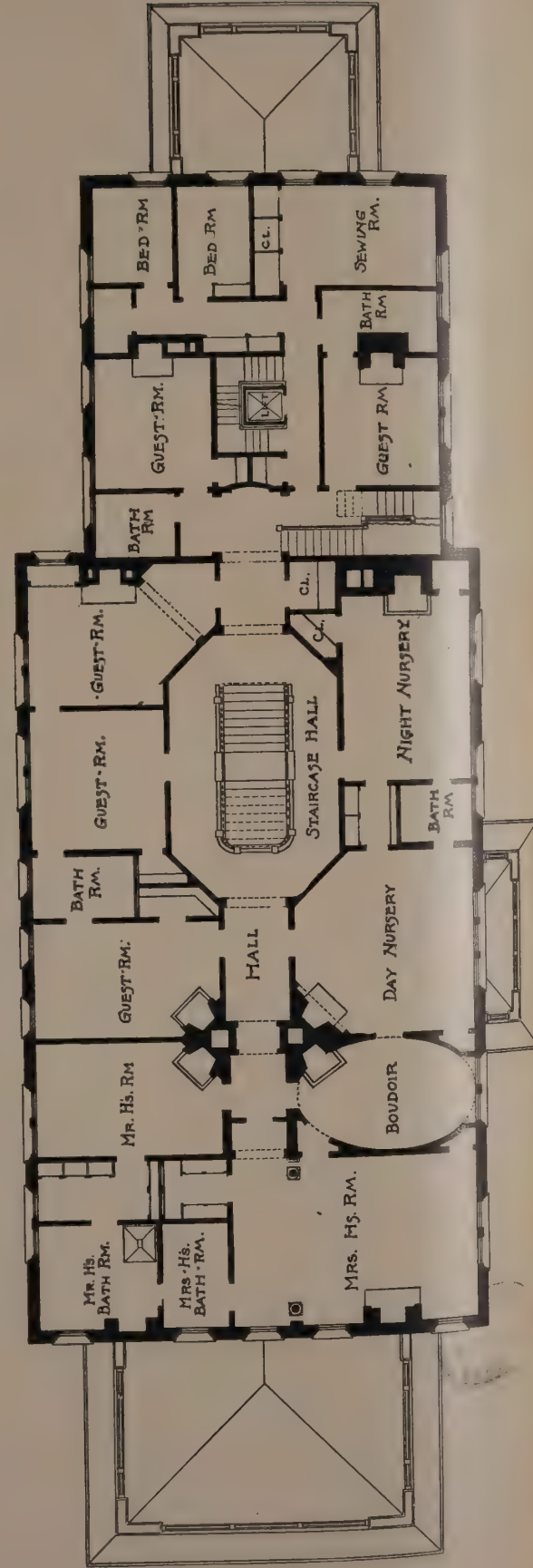


FIRST FLOOR PLAN.

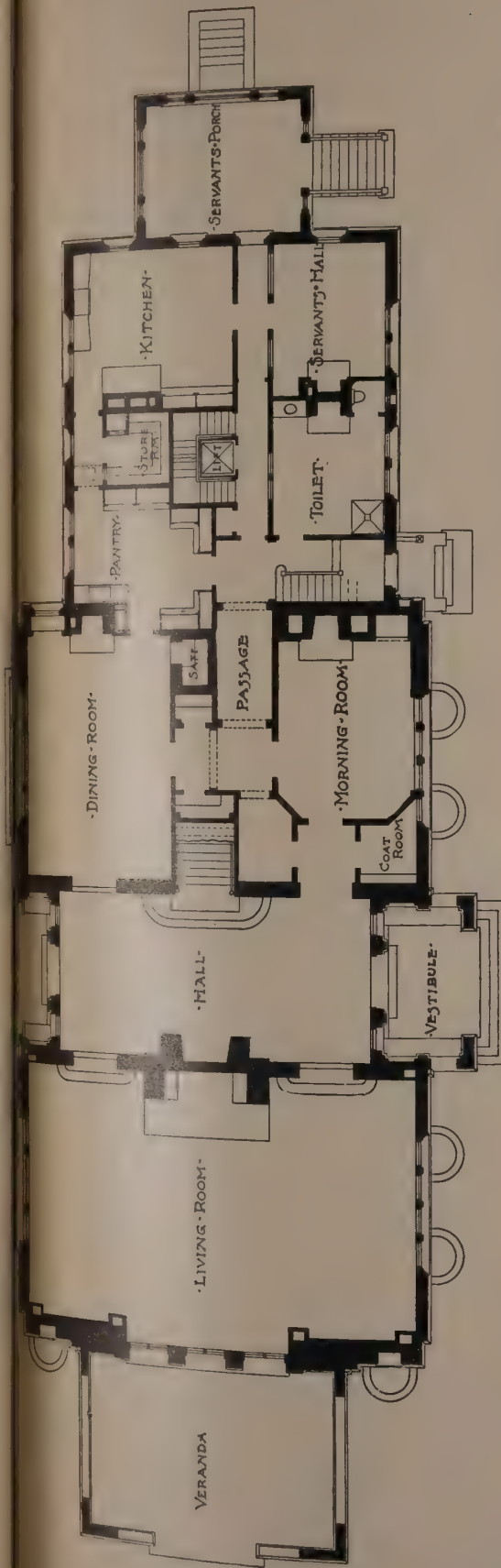
PLANS, HOUSE FOR T. JEFFERSON COOLIDGE, JR., ESQ., AT MANCHESTER, MASS.
MCKIM, MEAD & WHITE, ARCHITECTS.



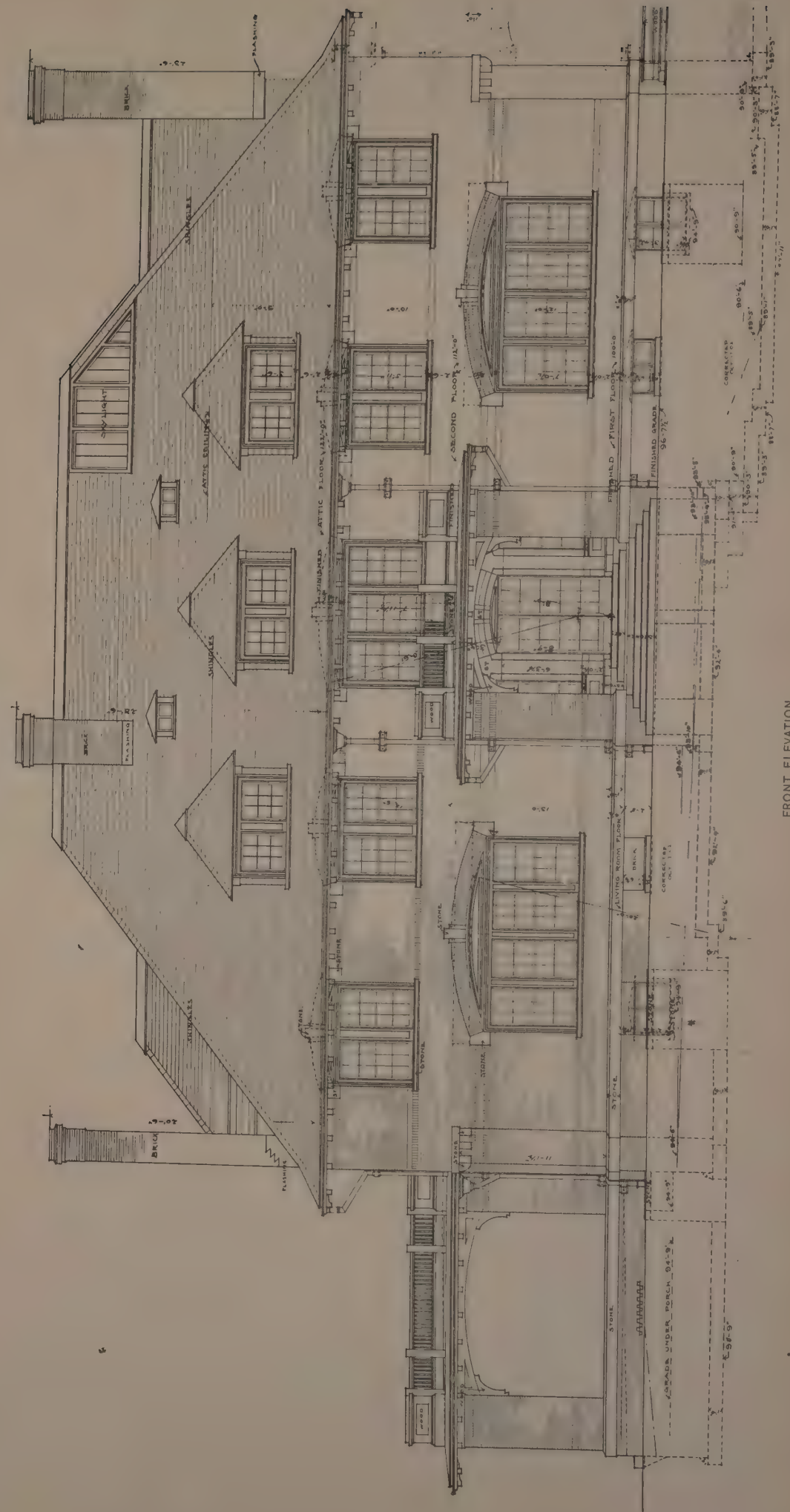
SECTION.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.



FRONT ELEVATION.



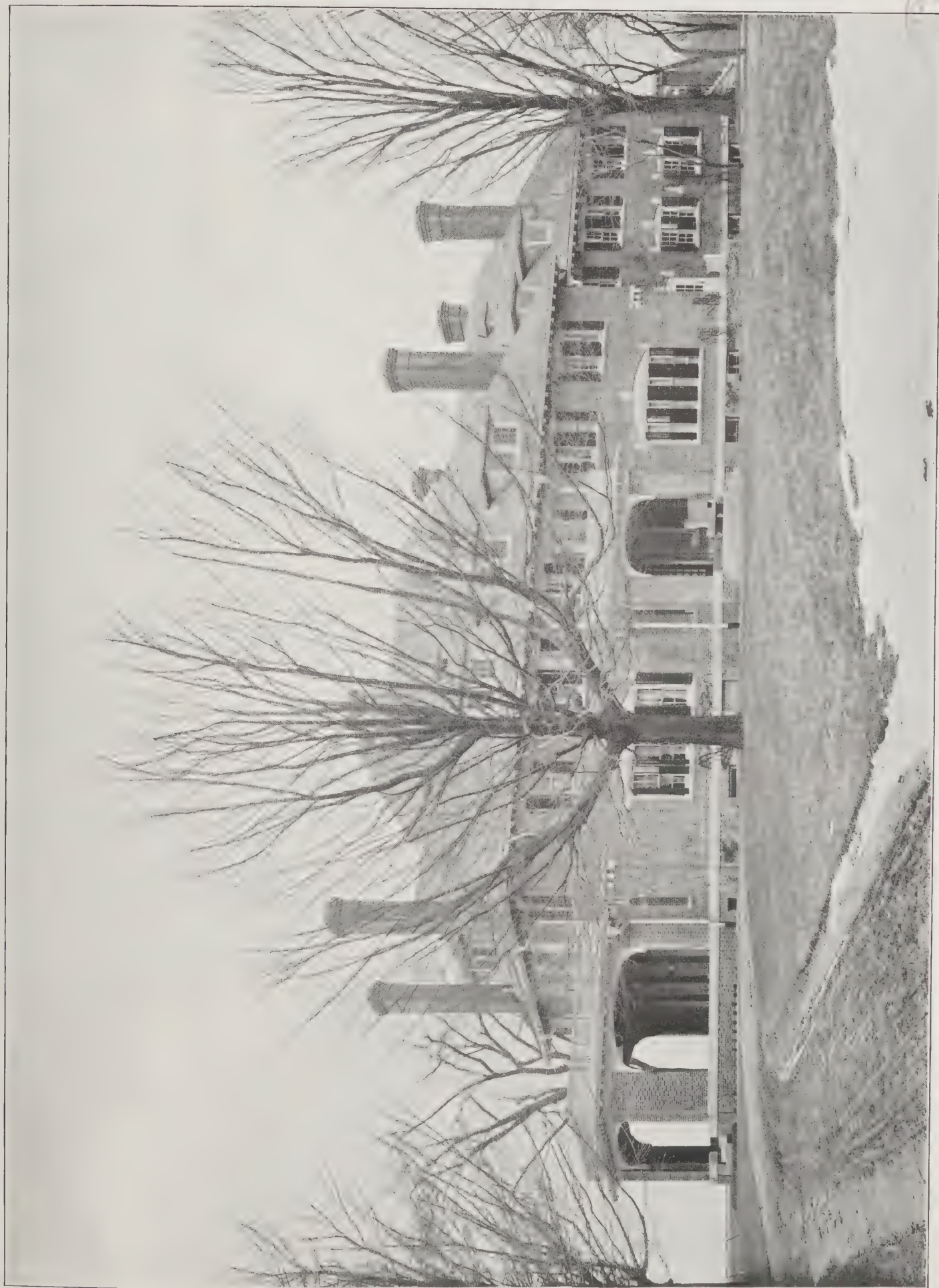
HOUSE AT CANTON, ILL.
ROBERT C. SPENCER, JR., ARCHITECT.



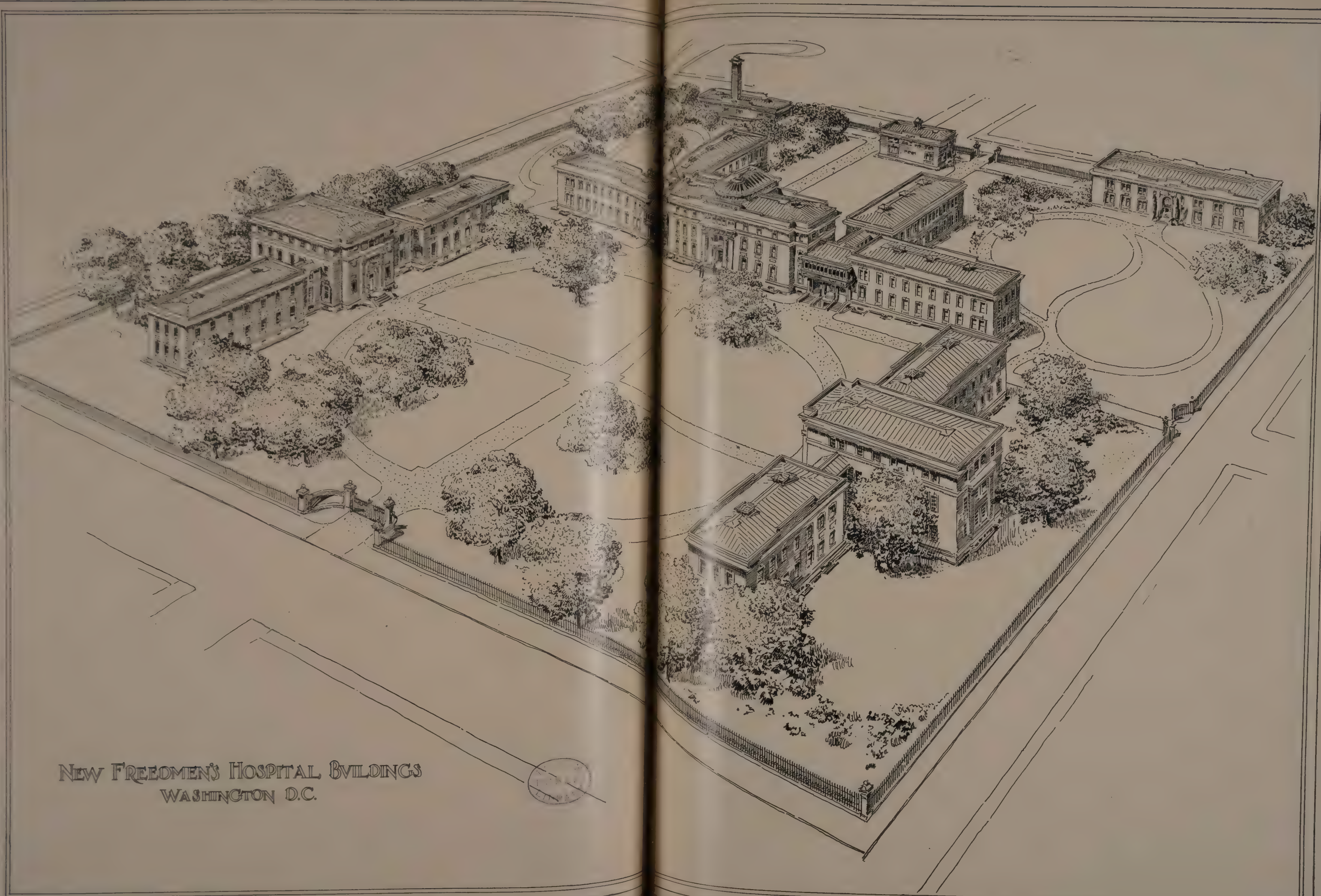
HOUSE FOR T. JEFFERSON COOLIDGE, JR., ESQ., AT MANCHESTER MASS.
MCKIM, MEAD & WHITE, ARCHITECTS.



DETAIL OF NORTH FRONT OF HOUSE FOR T. JEFFERSON COOLIDGE, JR., ESQ. AT MANCHESTER, MASS
MCKIM, MEAD & WHITE, ARCHITECTS.

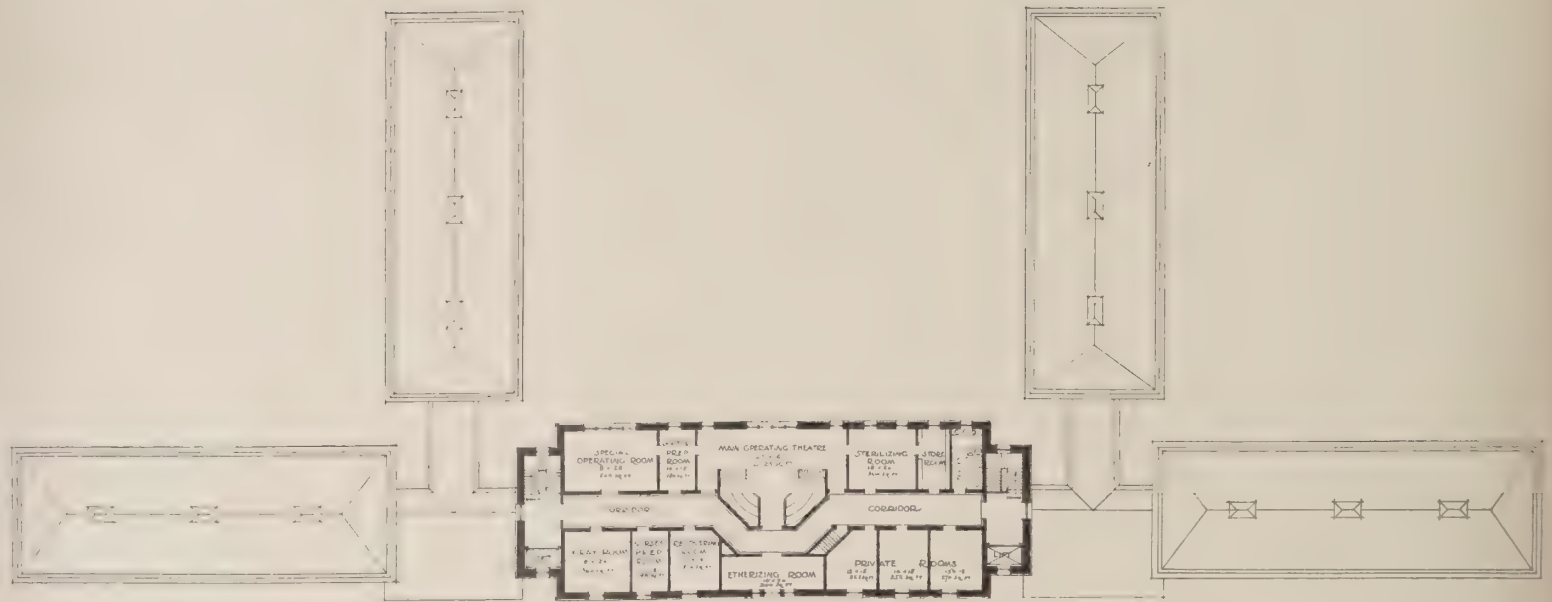


HOUSE AT MT. KISCO, N. Y.
L. HENRY MORGAN, JOHN GALEN HOWARD AND D. EVERETT WAID, ARCHITECTS.



NEW FREEDMEN'S HOSPITAL BUILDINGS
WASHINGTON D.C.

ACCEPTED DESIGN FOR FREEDMEN'S HOSPITAL, WASHINGTON, D. C.
BRUCE PRICE & DE SOUSSE, ARCHITECTS.



THIRD FLOOR PLAN.

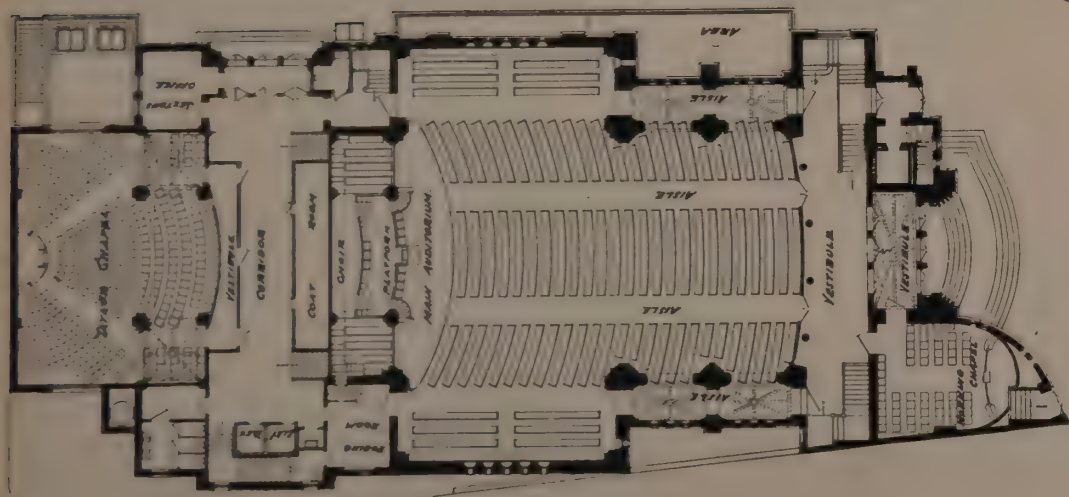


ADMINISTRATION BUILDING.

PLATE 20.



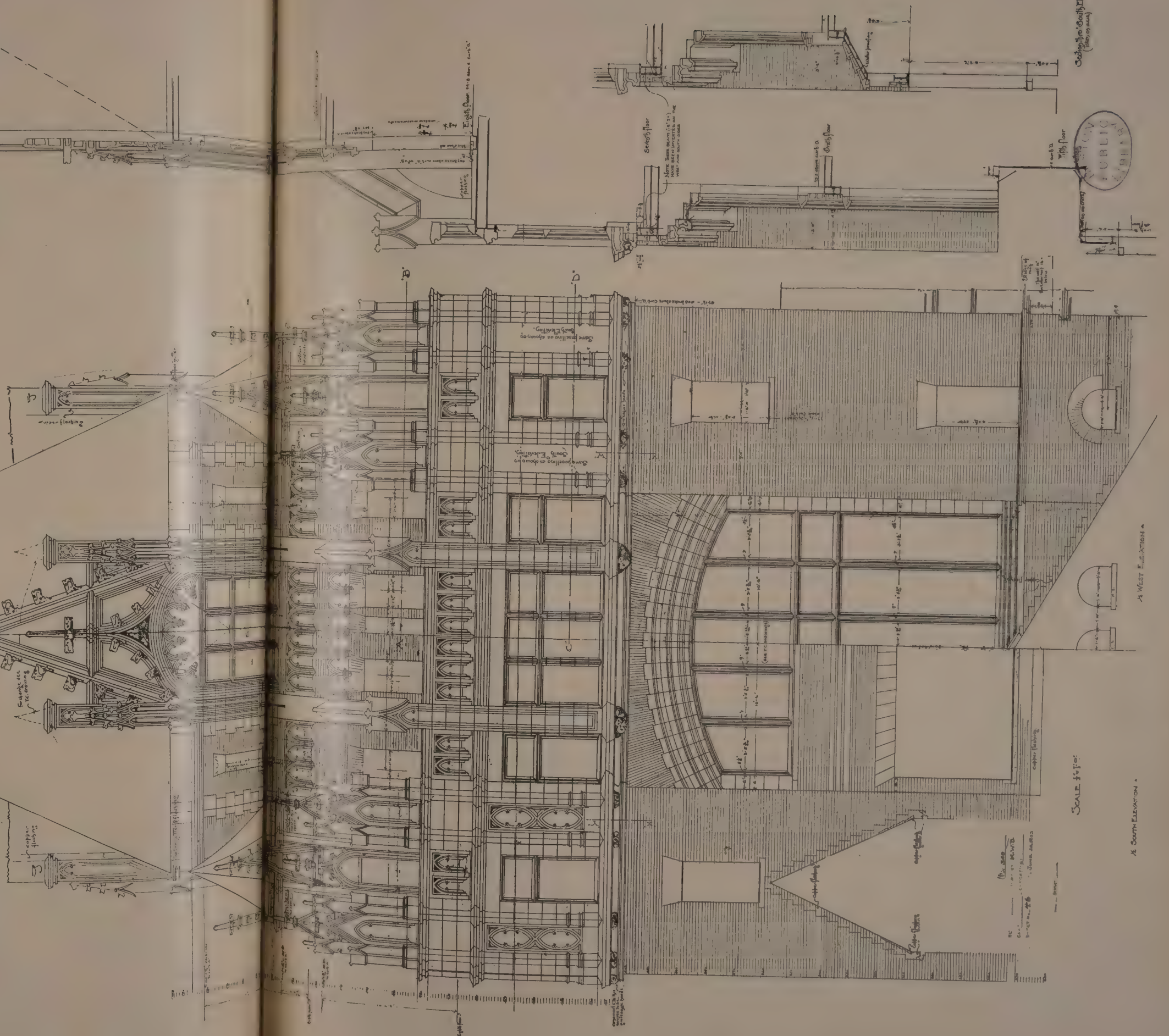
PLANS, FREEDMEN'S HOSPITAL, WASHINGTON, D. C.
BRUCE PRICE & DE SIBOUR AND JOHN RUSSELL POPE, ARCHITECTS.

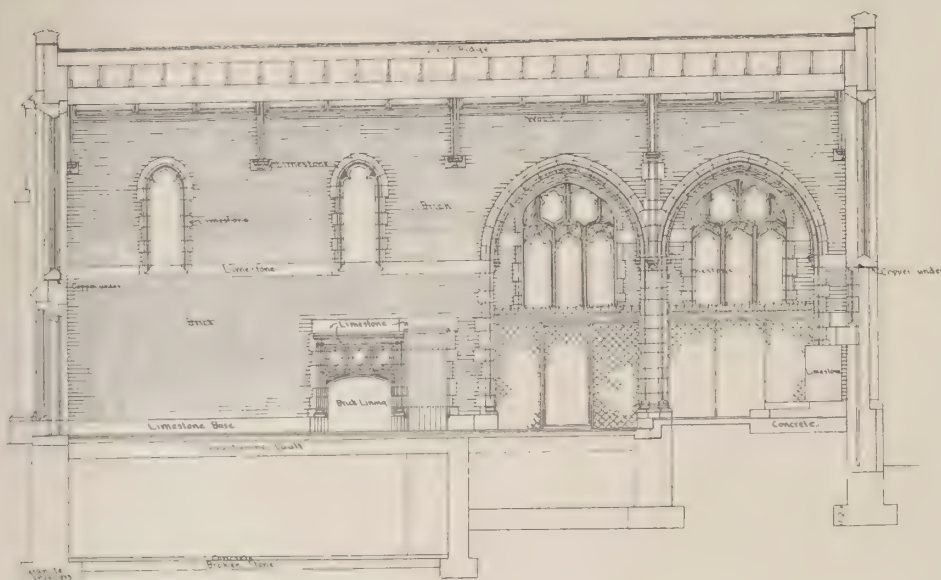


MAIN FLOOR PLAN.



PLAN SHOWING PASTOR'S SUITE.

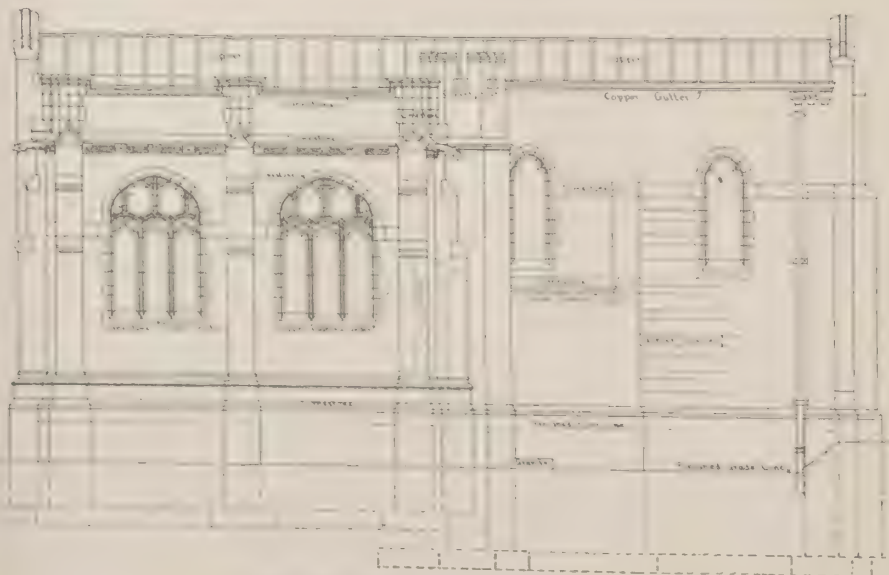
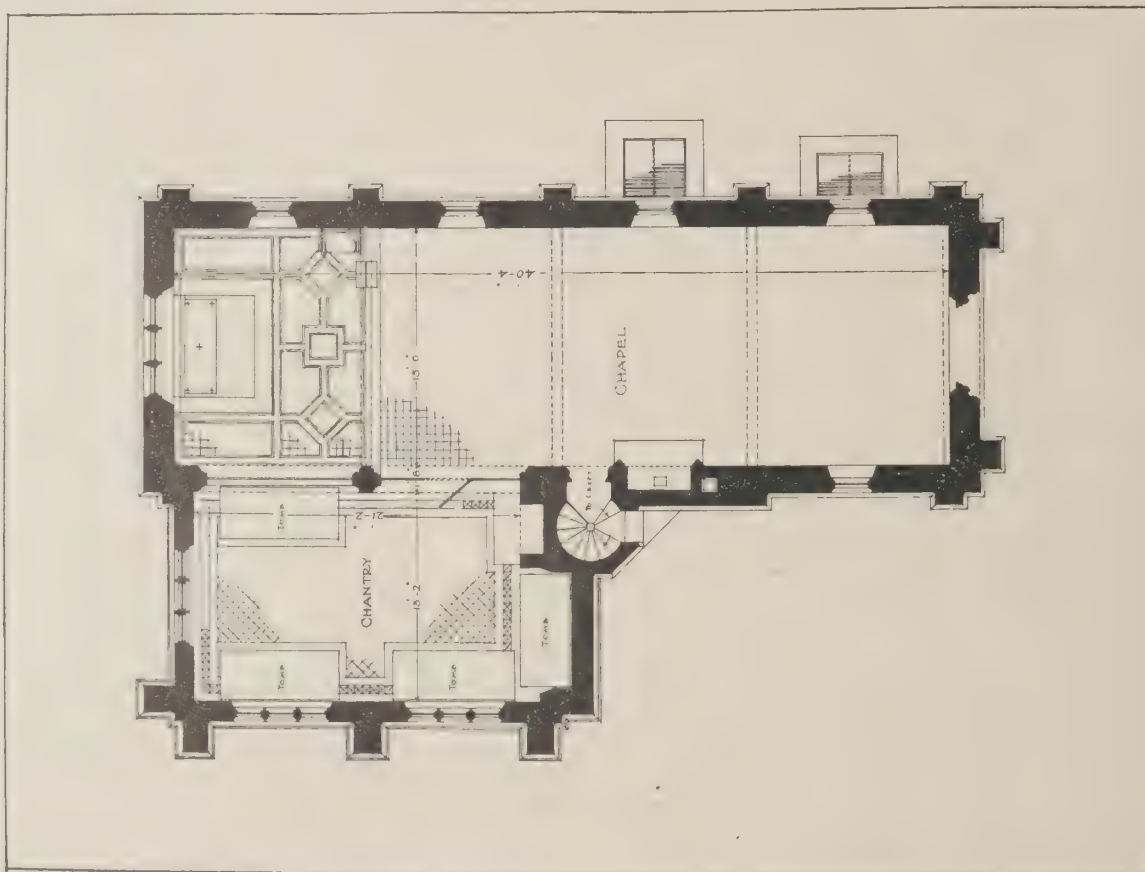




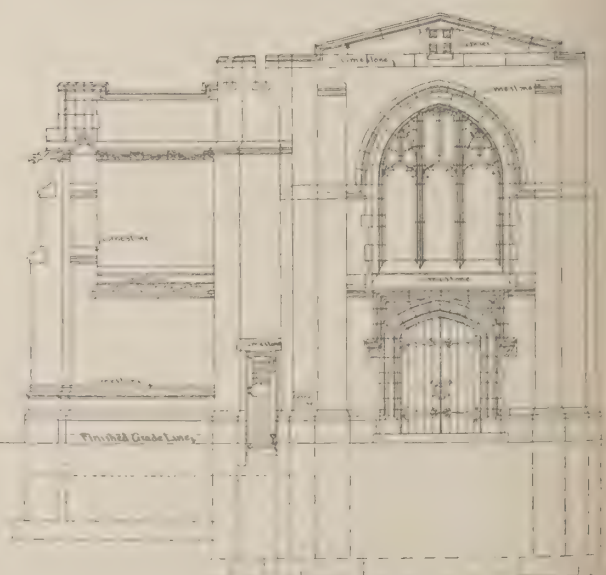
LONGITUDINAL SECTION THROUGH NAVE.



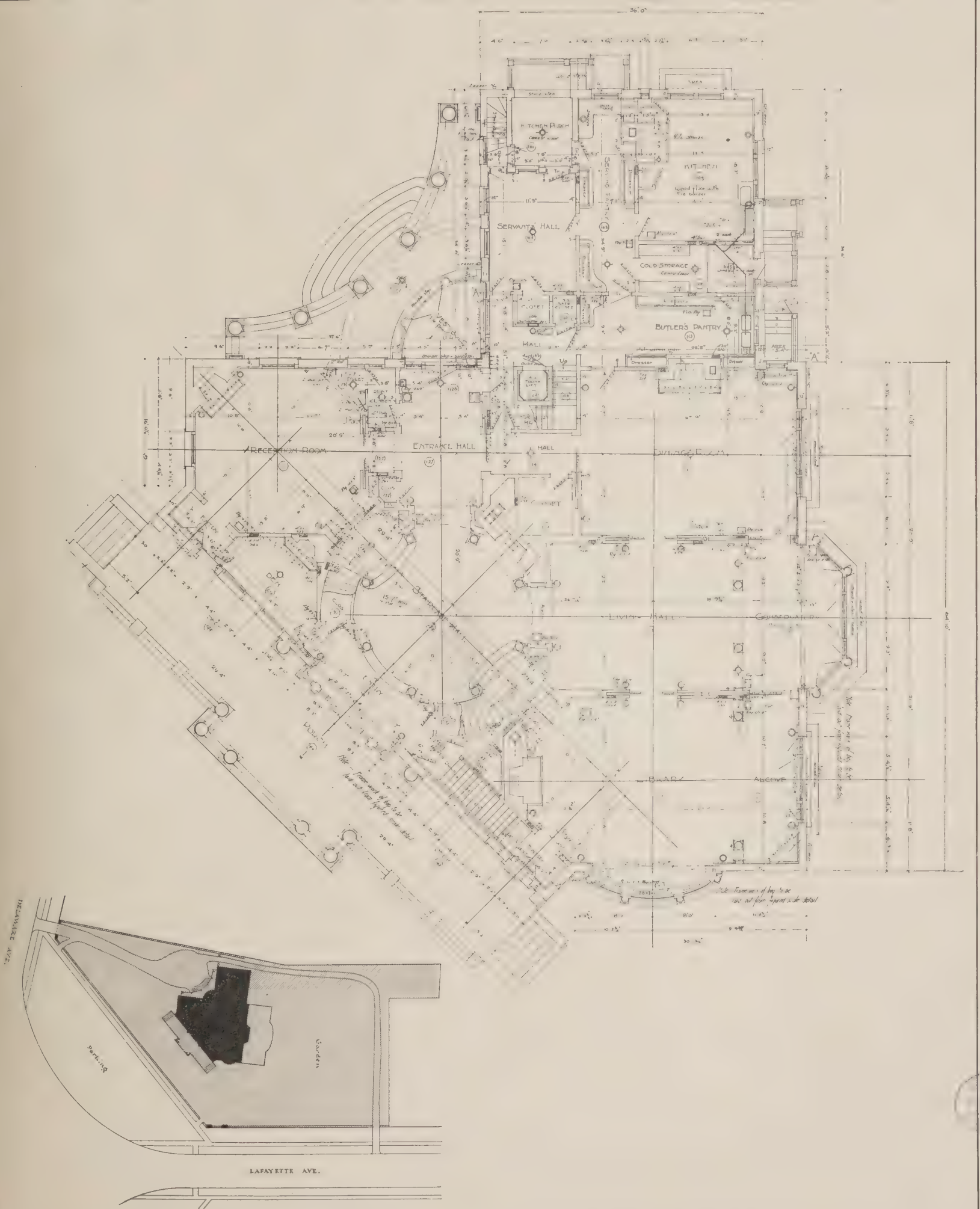
TRANSVERSE SECTION.



SIDE ELEVATION.



FRONT ELEVATION.



GROUND AND FIRST FLOOR PLAN, HOUSE AT BUFFALO, N. Y.

GROSVENOR ATTERBURY, ARCHITECT.



THE BROADWAY TABERNACLE, BROADWAY AND 56TH STREET, NEW YORK CITY.

BARNEY & CHAPMAN, ARCHITECTS.

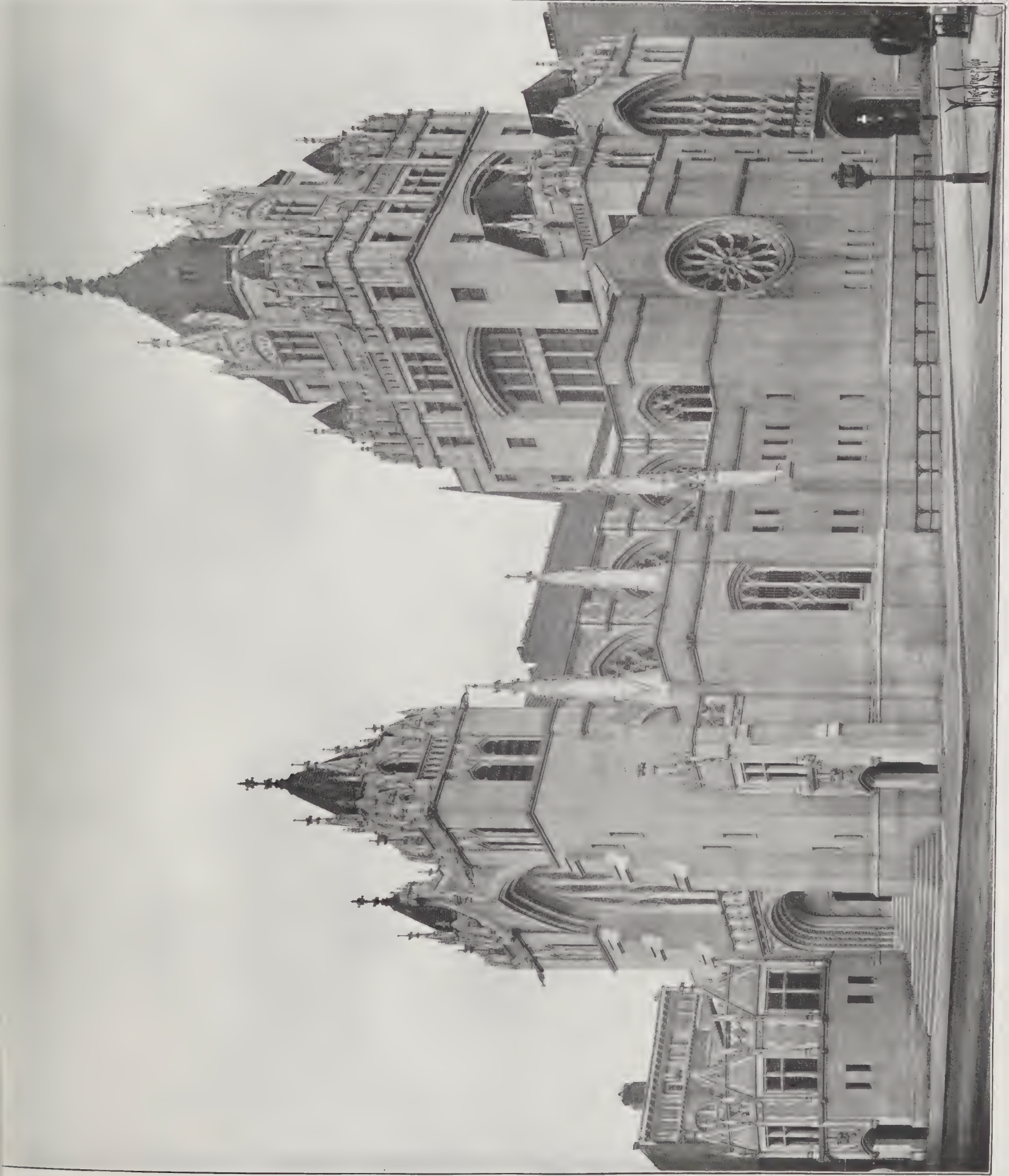


VIEW OF NAVE, CHAPEL OF SAINT CATHARINE, SPRING LAKE, N. J.
HORACE TRUMBAUER, ARCHITECT.



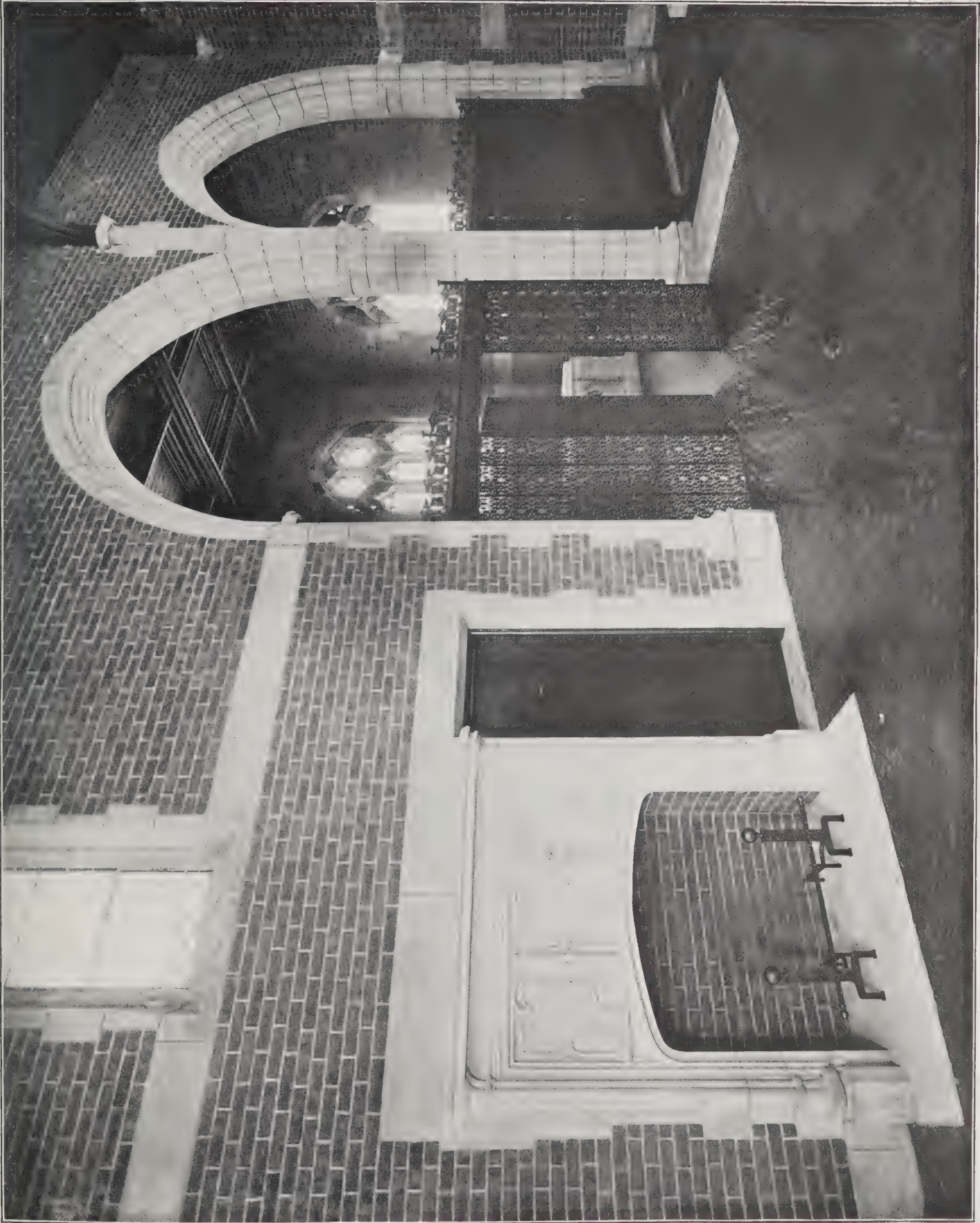


HOUSE AT BUFFALO, N. Y.
GROSVENOR ATTERBURY, ARCHITECT.



THE BROADWAY TABERNACLE, BROADWAY AND 56TH STREET, NEW YORK CITY.
BARNEY & CHAPMAN, ARCHITECTS.

THE BRICKBUILDER,
MARCH,
1906.

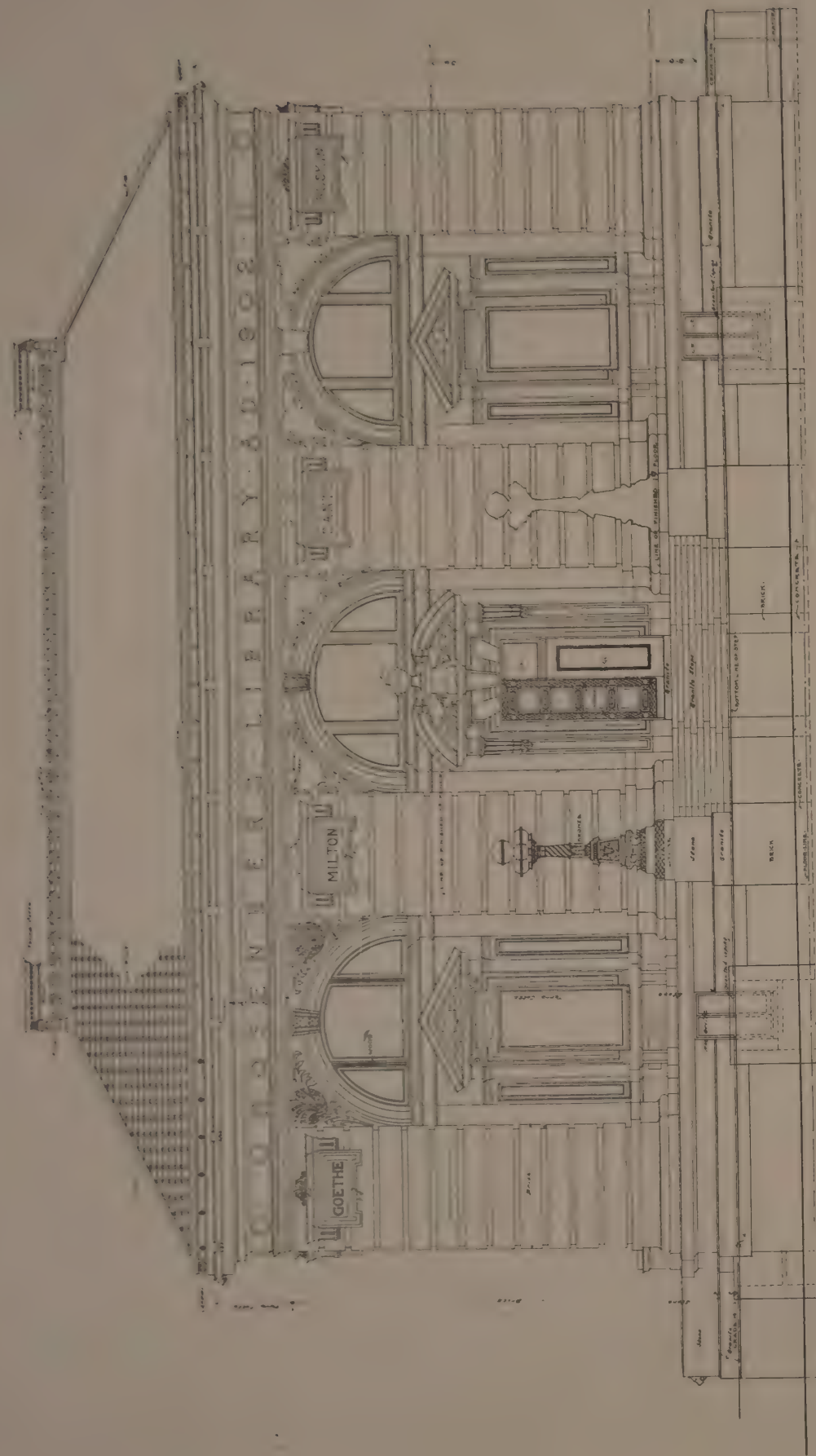


INTERIOR VIEW, LOOKING TOWARD CHANTRY, MORTUARY CHAPEL, NORWOOD, MASS.

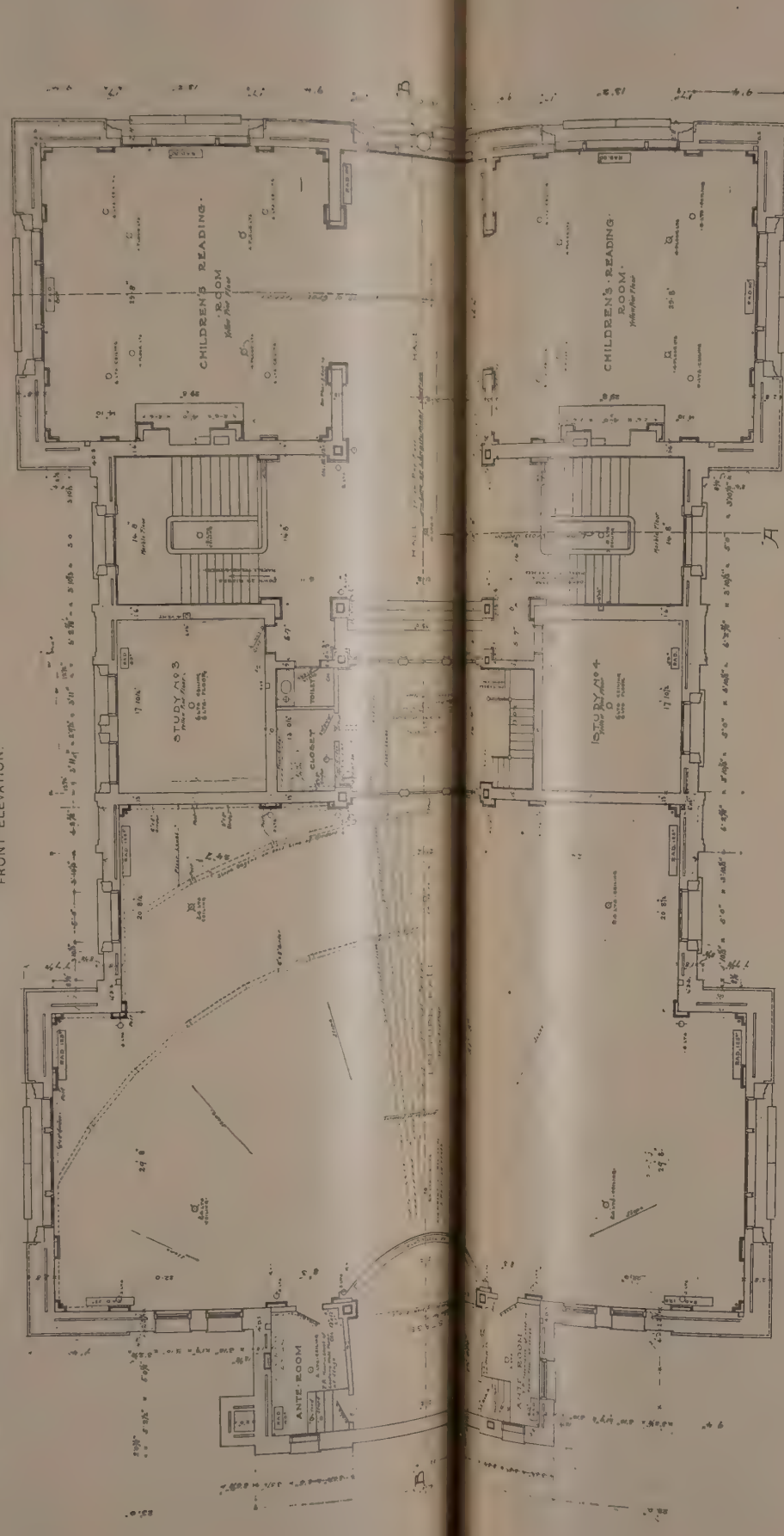
CRAM, GOODHUE & FERGUSON, ARCHITECTS.



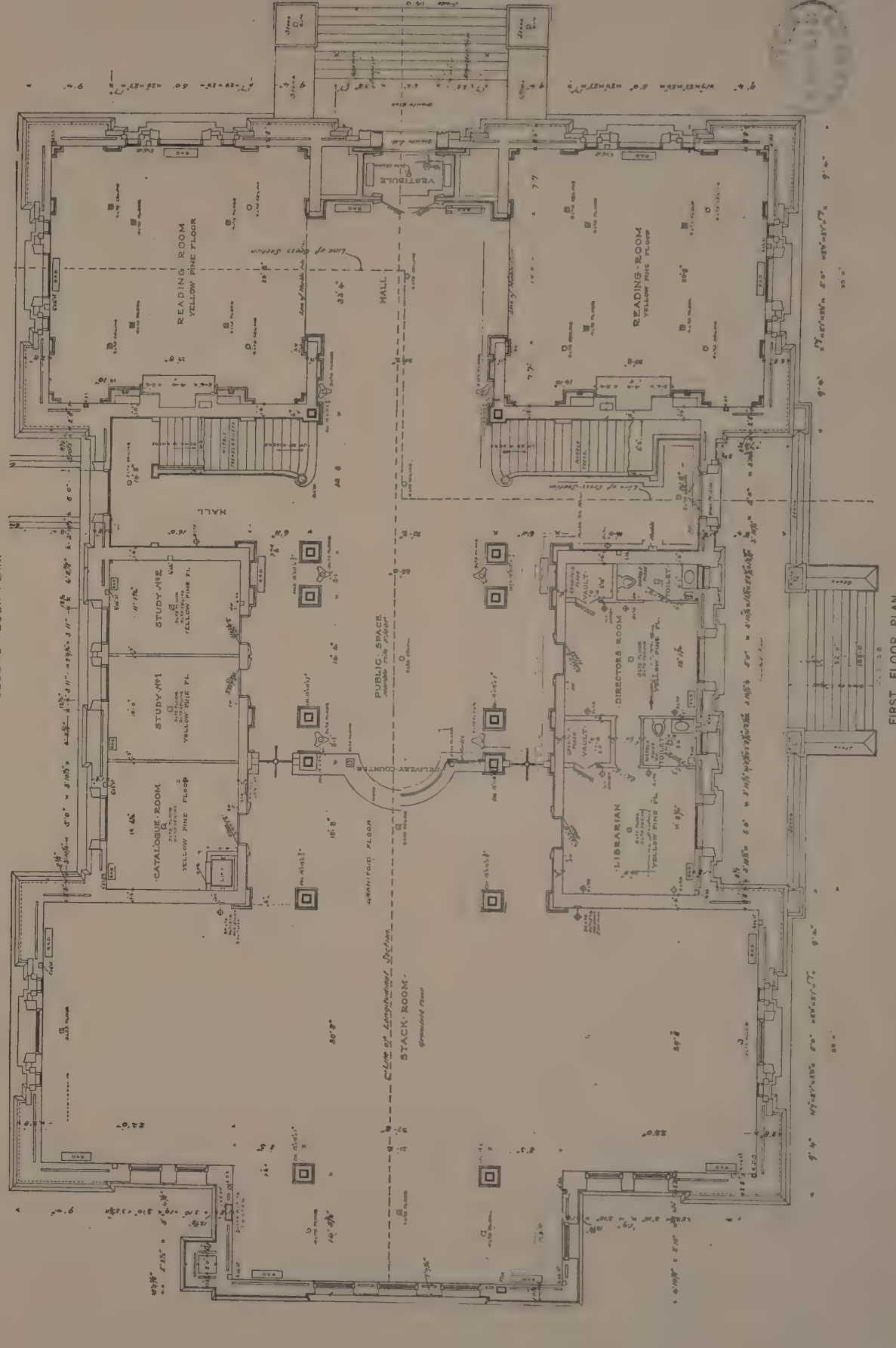
CHAPEL OF SAINT CATHARINE, SPRING LAKE, N. J.
HORACE TRUMBAUER, ARCHITECT.



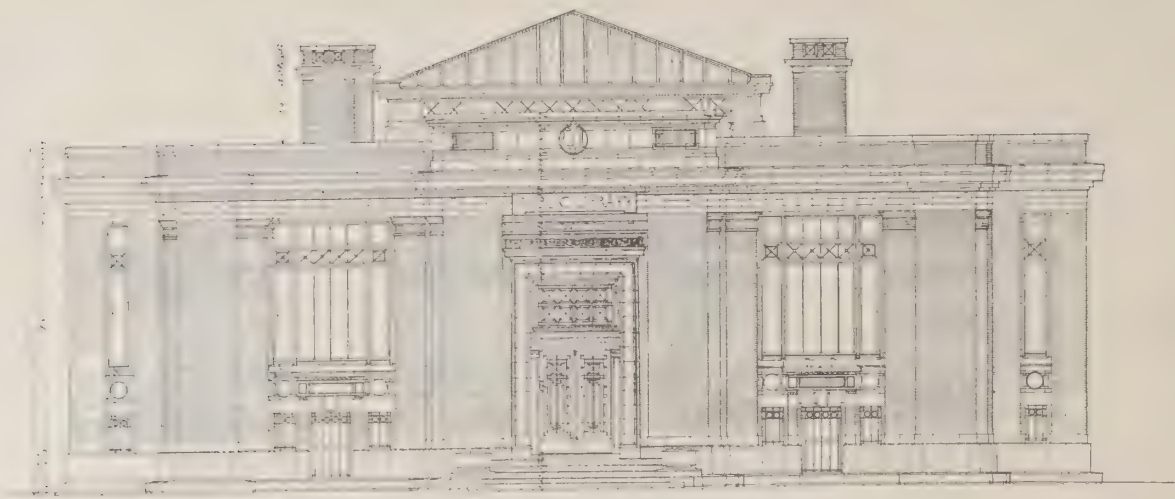
FRONT ELEVATION.



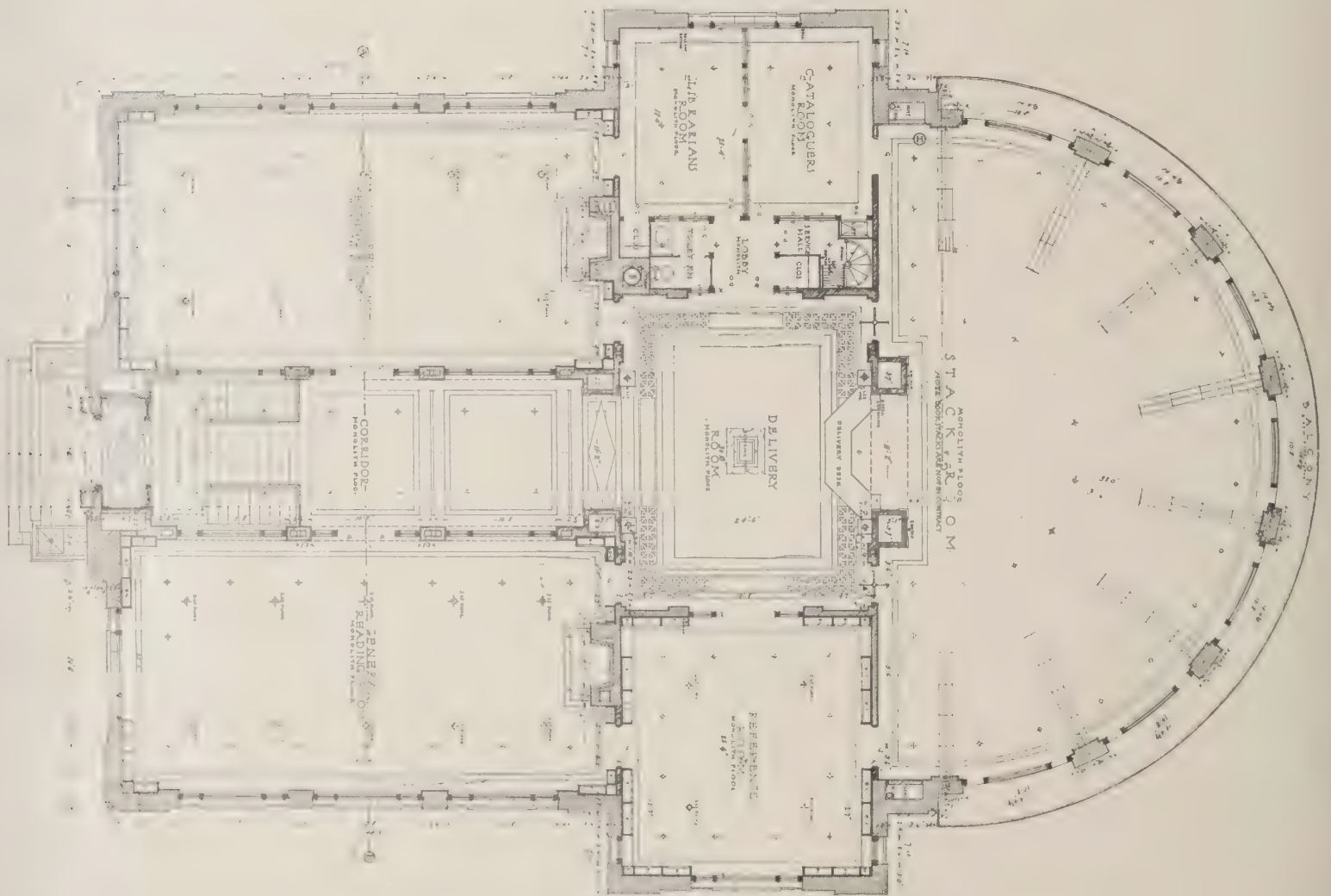
SECOND FLOOR PLAN.



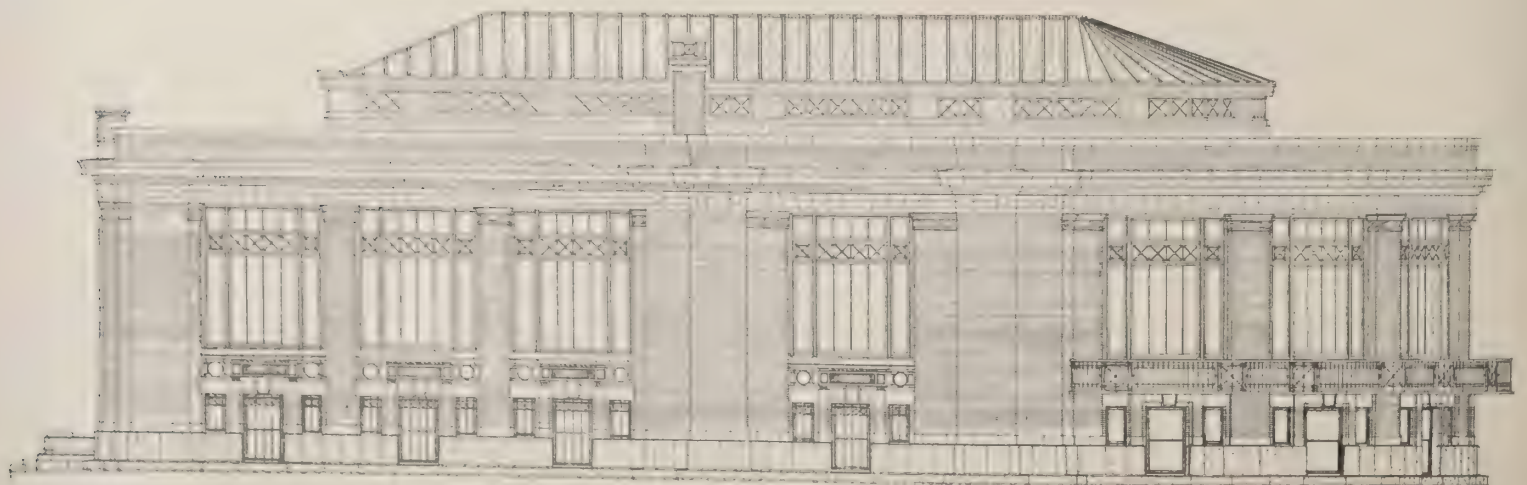
FIRST FLOOR PLAN.



FRONT ELEVATION.



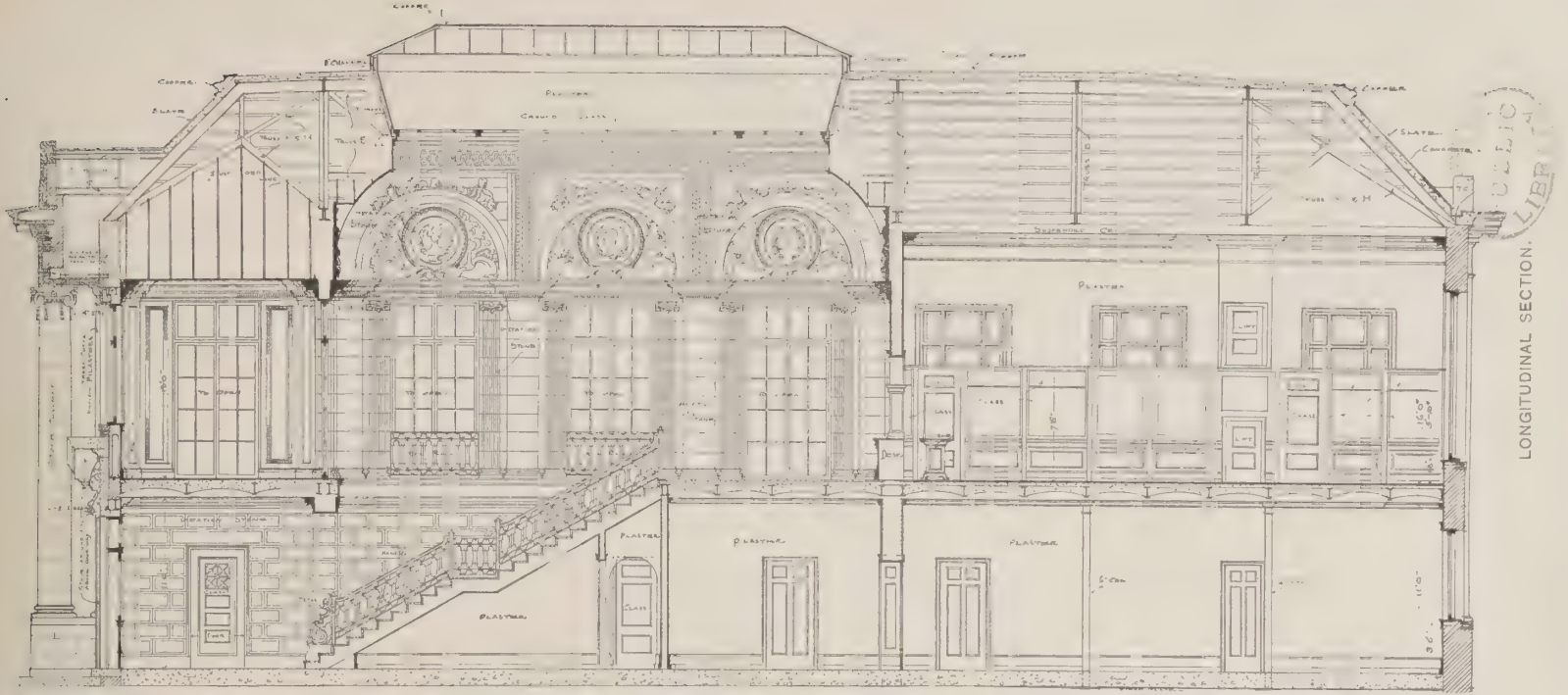
FIRST FLOOR PLAN.



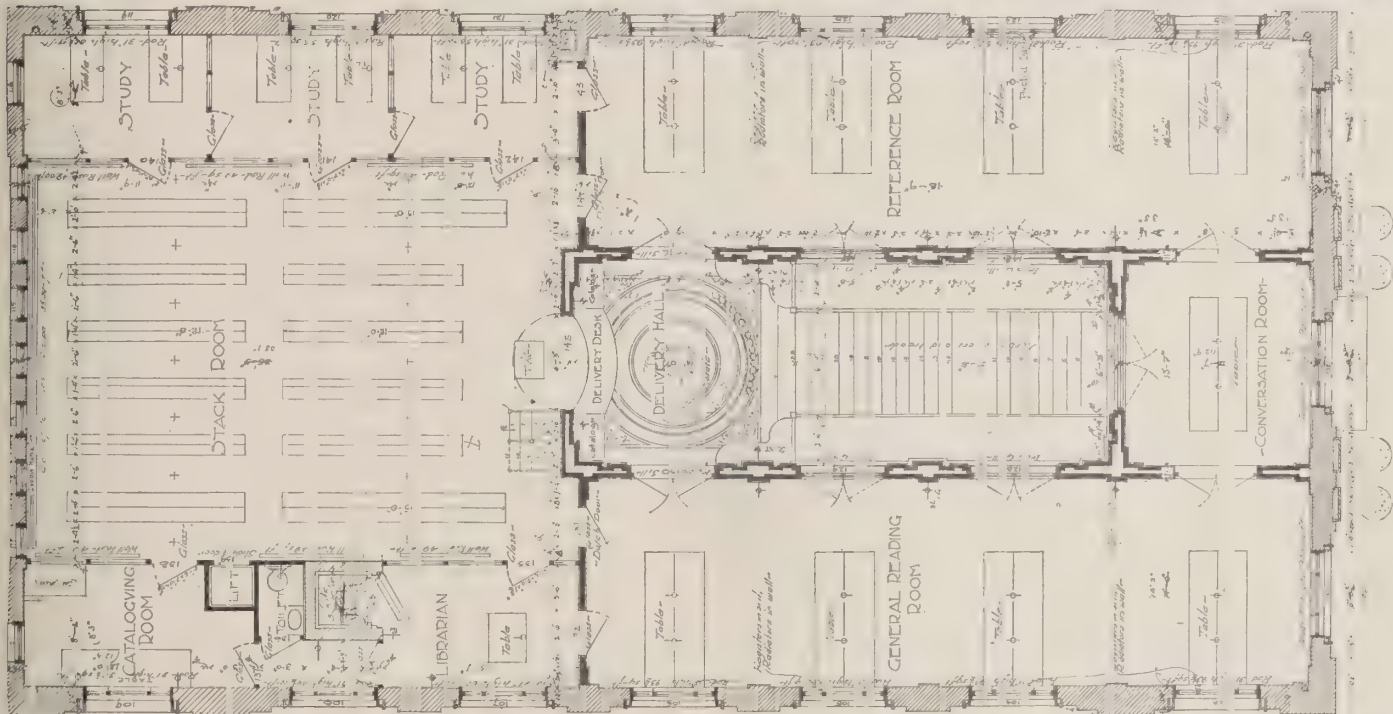
SIDE ELEVATION.

CARNEGIE LIBRARY, COLORADO SPRINGS, COL.

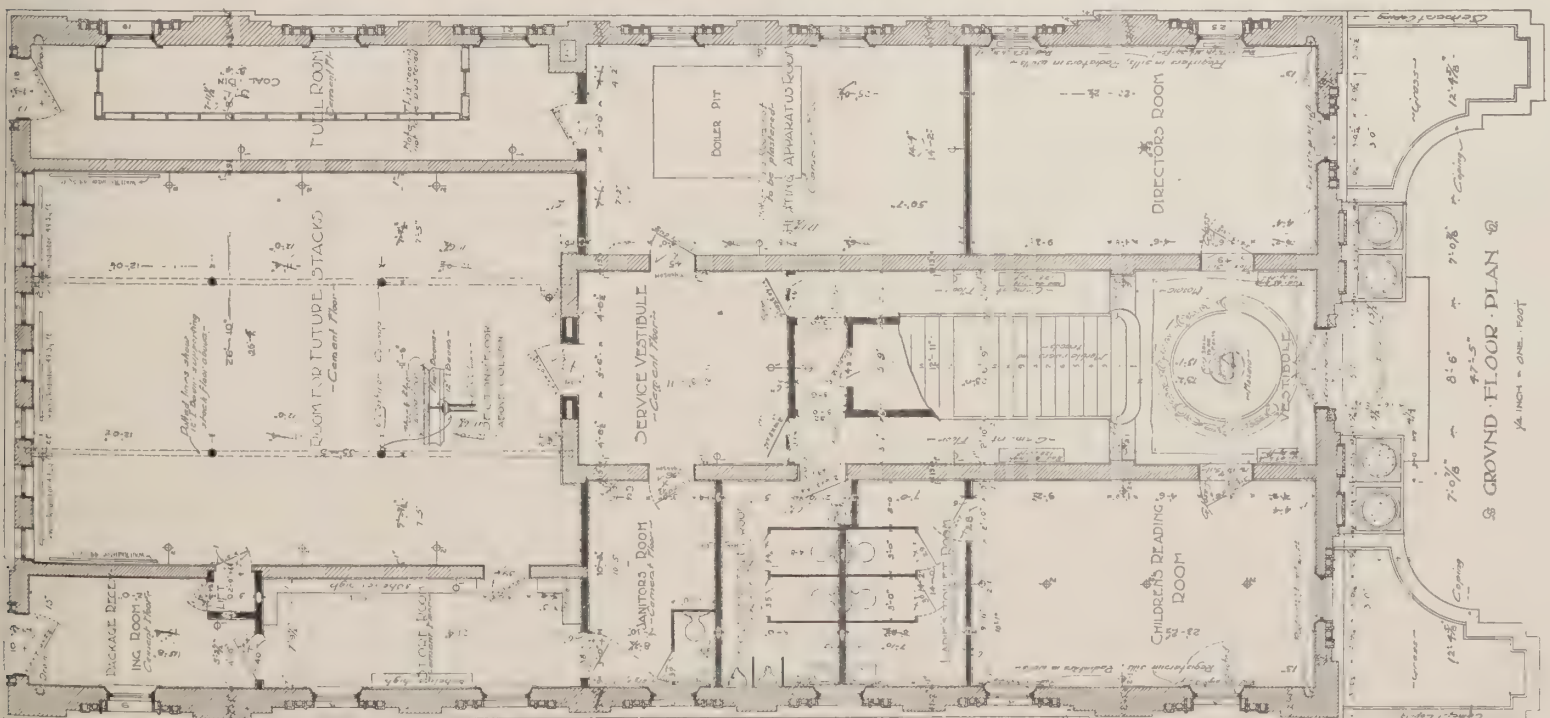
CALVIN KIESSLING, ARCHITECT.



LONGITUDINAL SECTION.



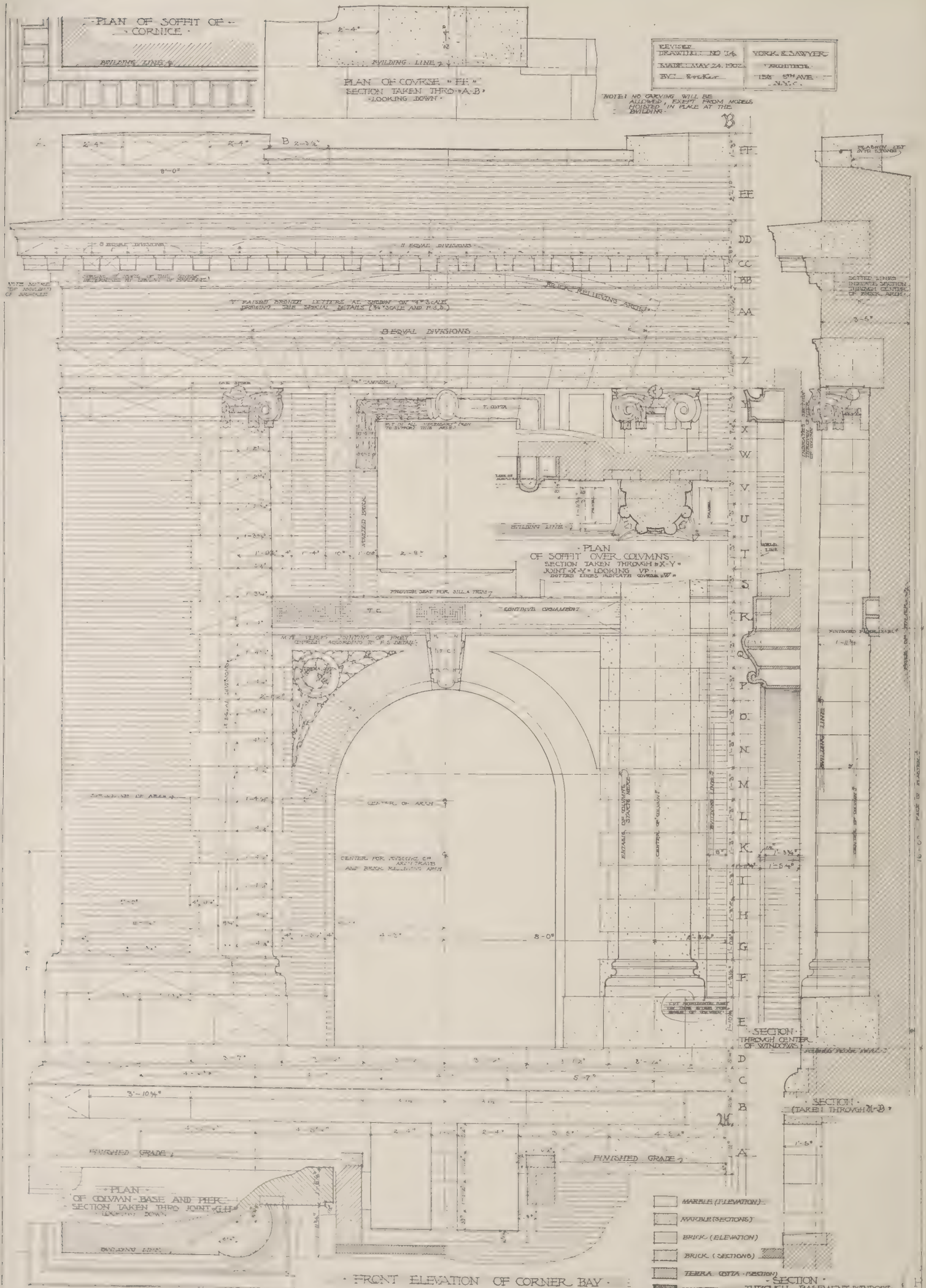
SECOND FLOOR PLAN.

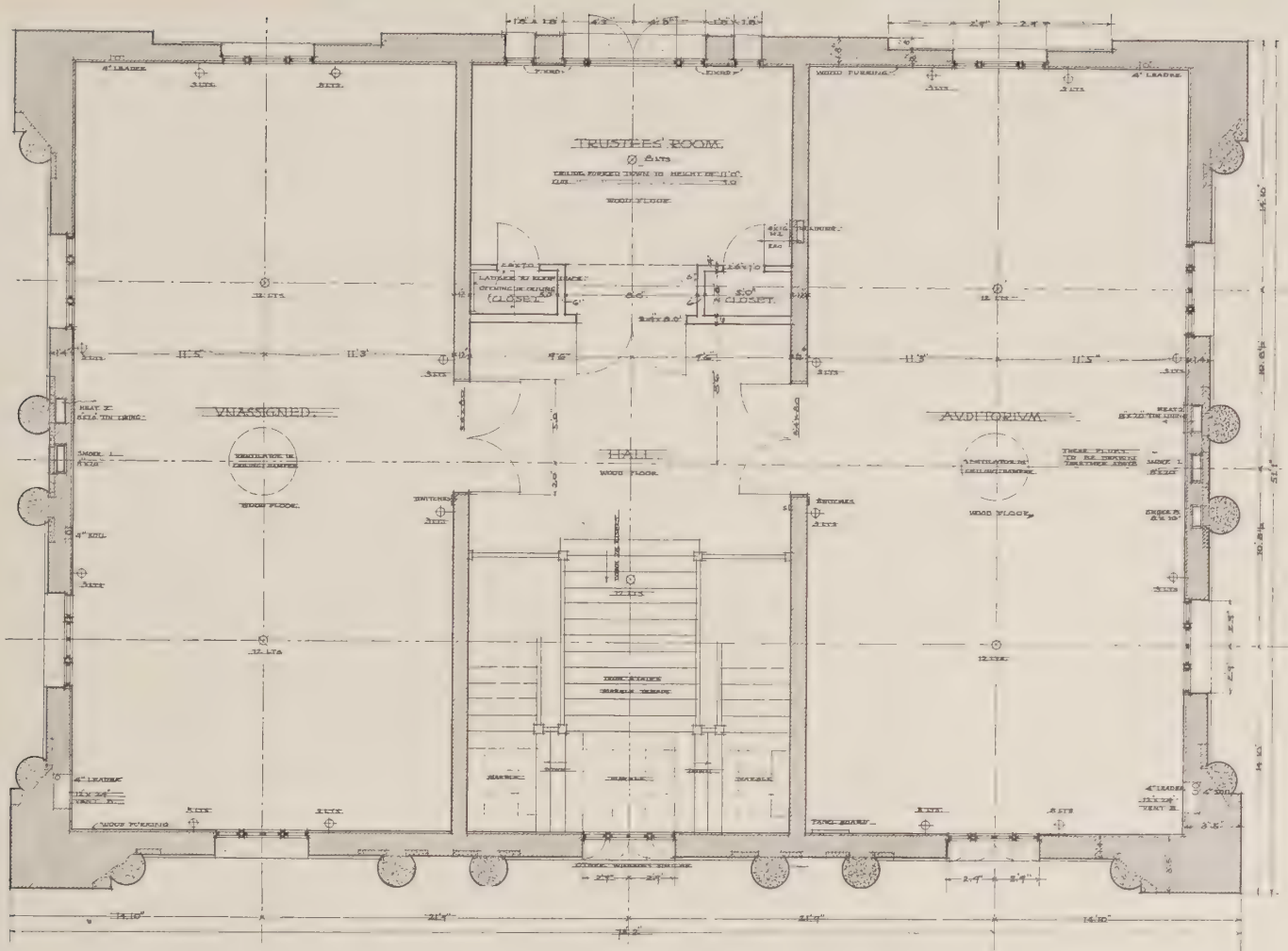


GROUND FLOOR PLAN

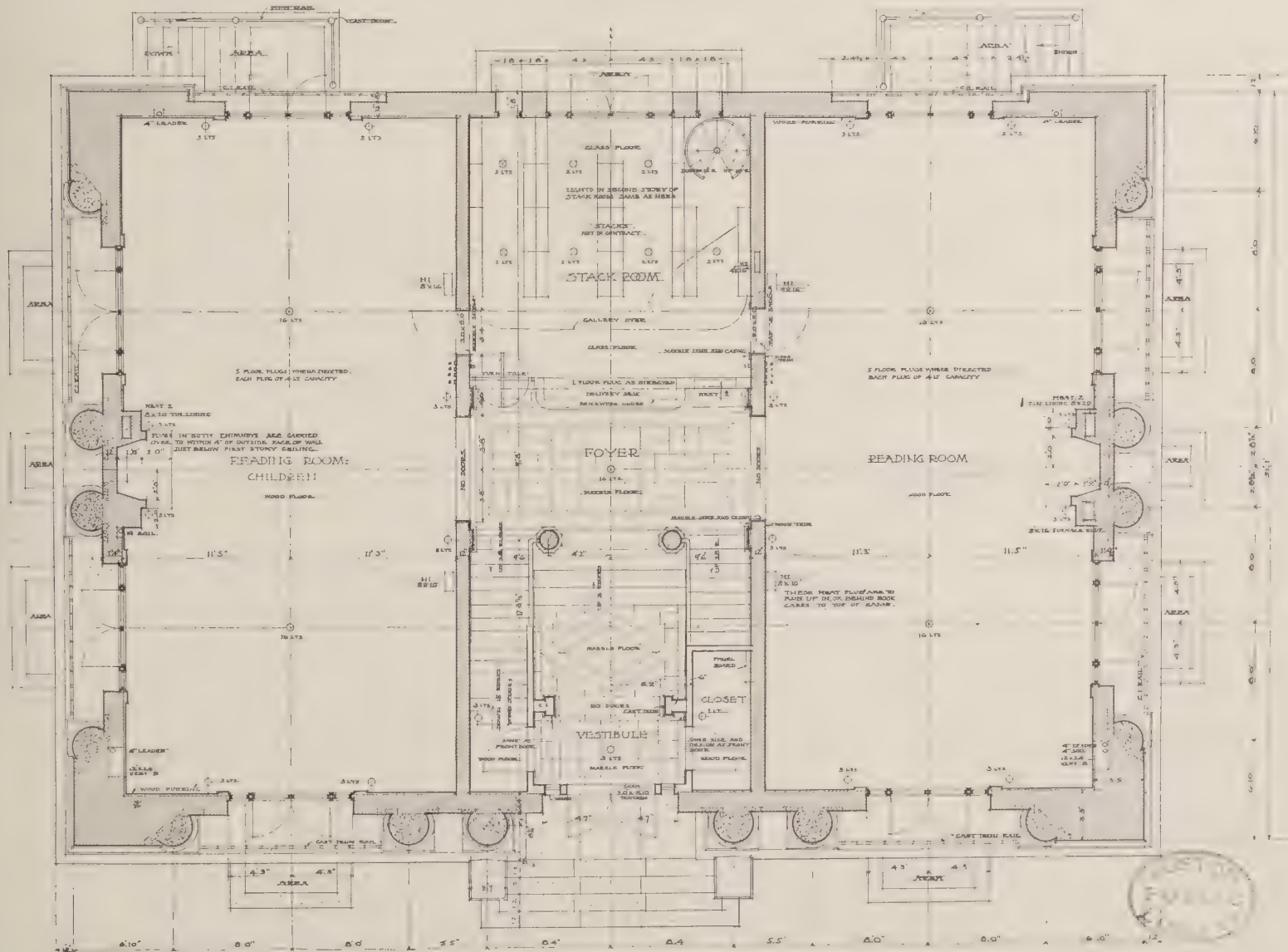
FIRST FLOOR PLAN.

PUBLIC LIBRARY, NORFOLK, VA.
HERBERT D. HALE AND HENRY G. MORSE, JR., ASSOCIATE ARCHITECTS.





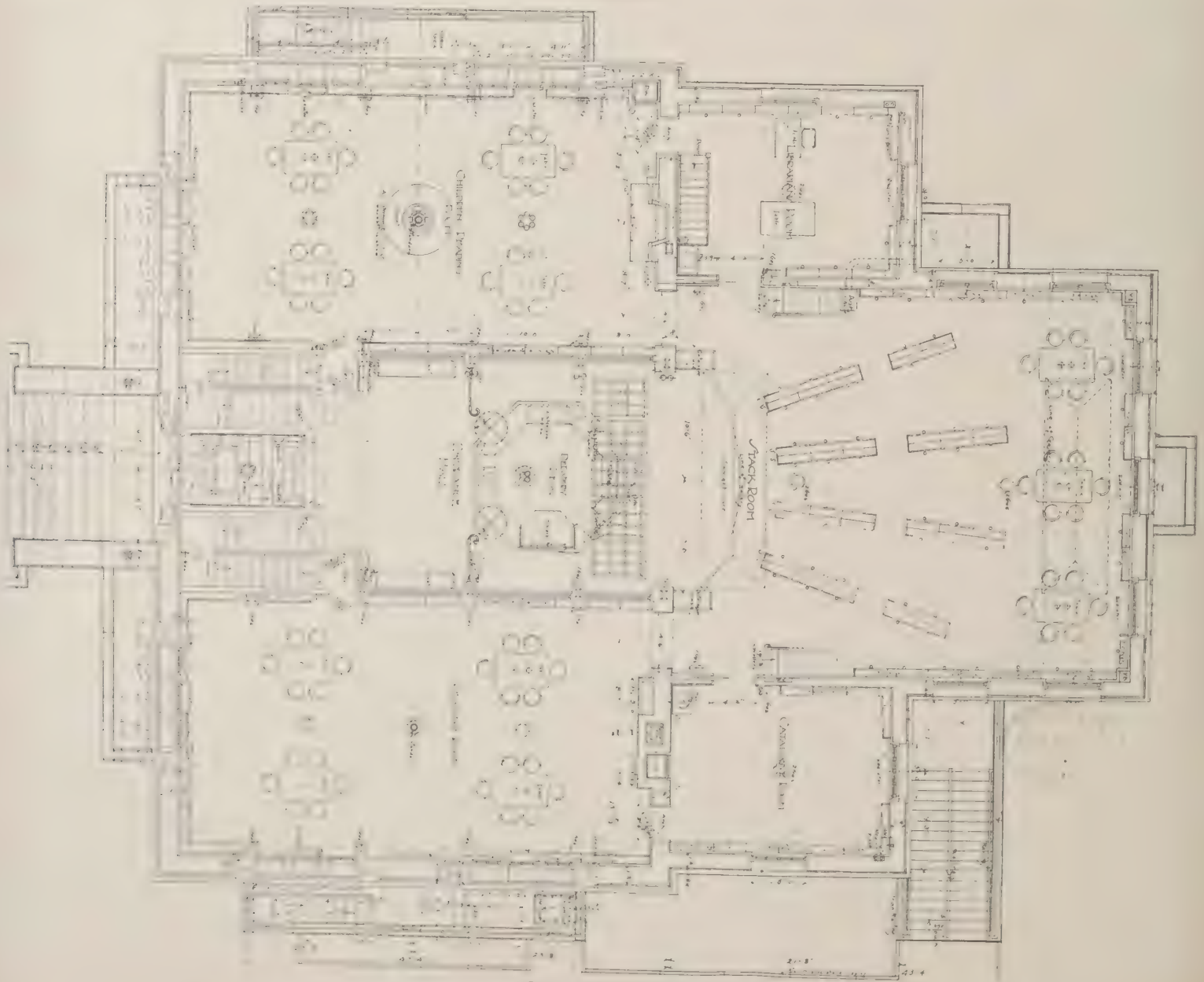
SECOND FLOOR PLAN.



FIRST FLOOR PLAN.



FRONT ELEVATION.

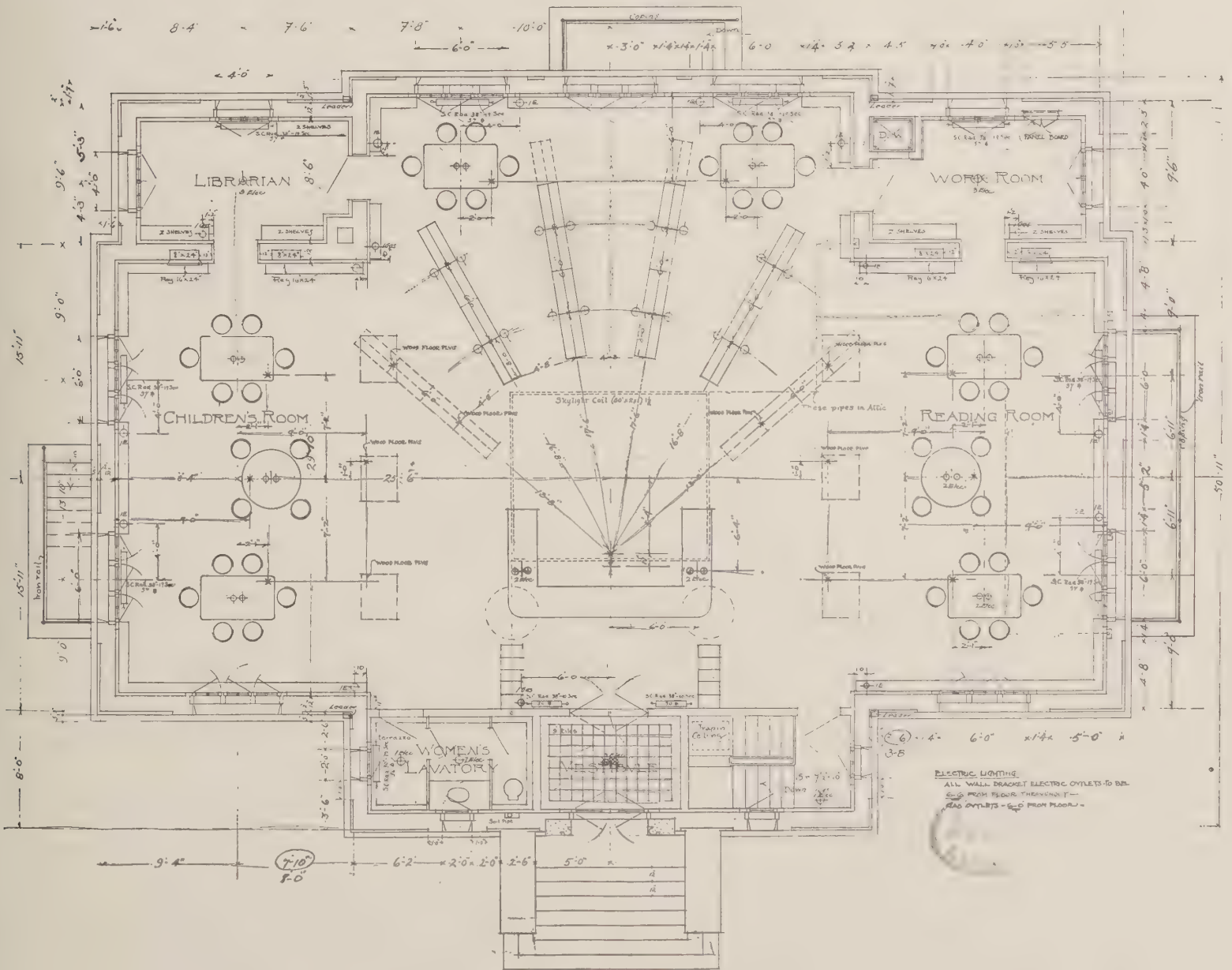


FIRST FLOOR PLAN.

BEDFORD BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.
LORD & HEWLETT, ARCHITECTS.



FRONT ELEVATION.



FAR ROCKAWAY BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.
LORD & HEWLETT, ARCHITECTS.



DETAIL OF MAIN ENTRANCE.
PUBLIC LIBRARY, COLORADO SPRINGS, COLO.
CALVIN KIESSLING, ARCHITECT.



PUBLIC LIBRARY, NORFOLK, VIRGINIA.
HERBERT D. HALE AND HENRY G. MORSE, JR., ASSOCIATE ARCHITECTS.



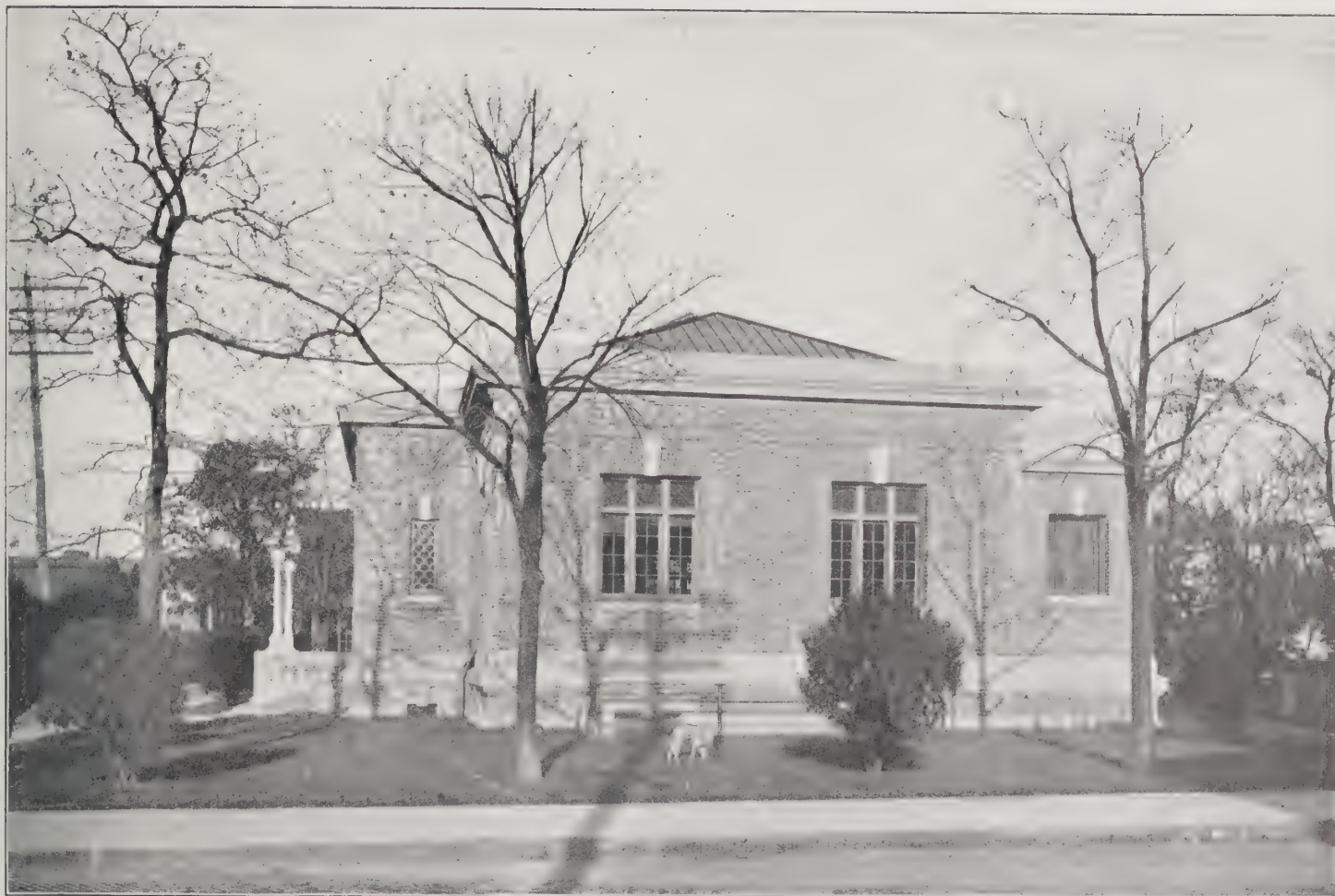
PUBLIC LIBRARY, GALVESTON, TEXAS.
EAMES & YOUNG, ARCHITECTS.



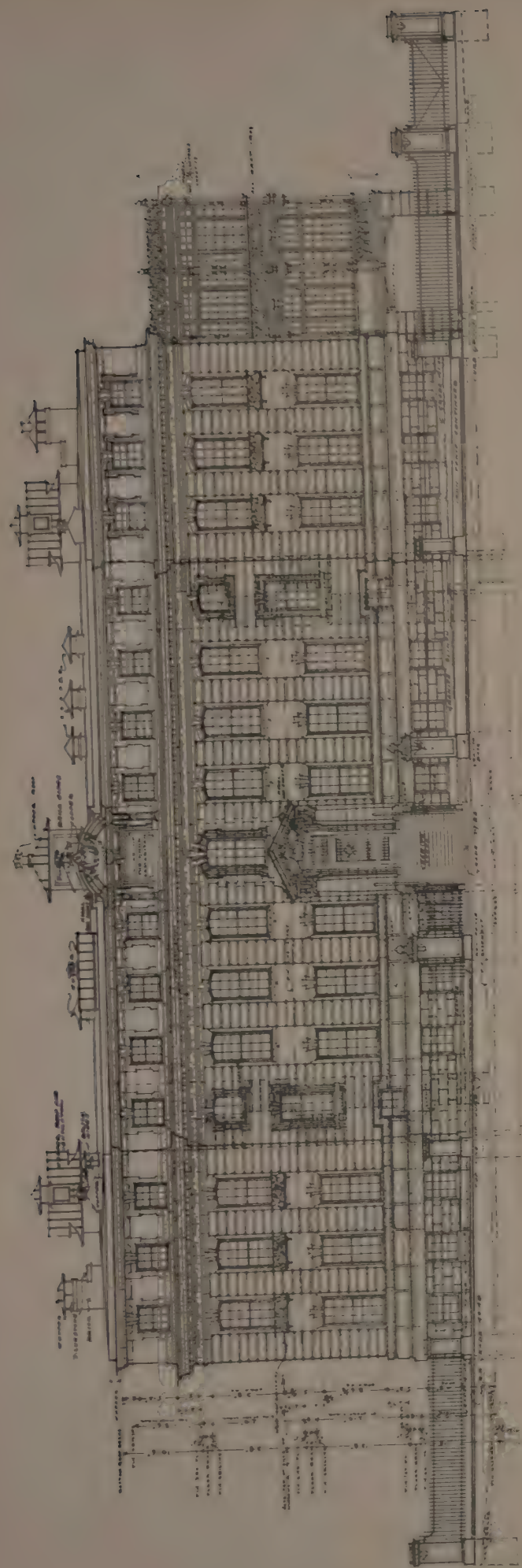
CARNEGIE LIBRARY, MONTGOMERY, ALABAMA.
YORK & SAWYER, ARCHITECTS.



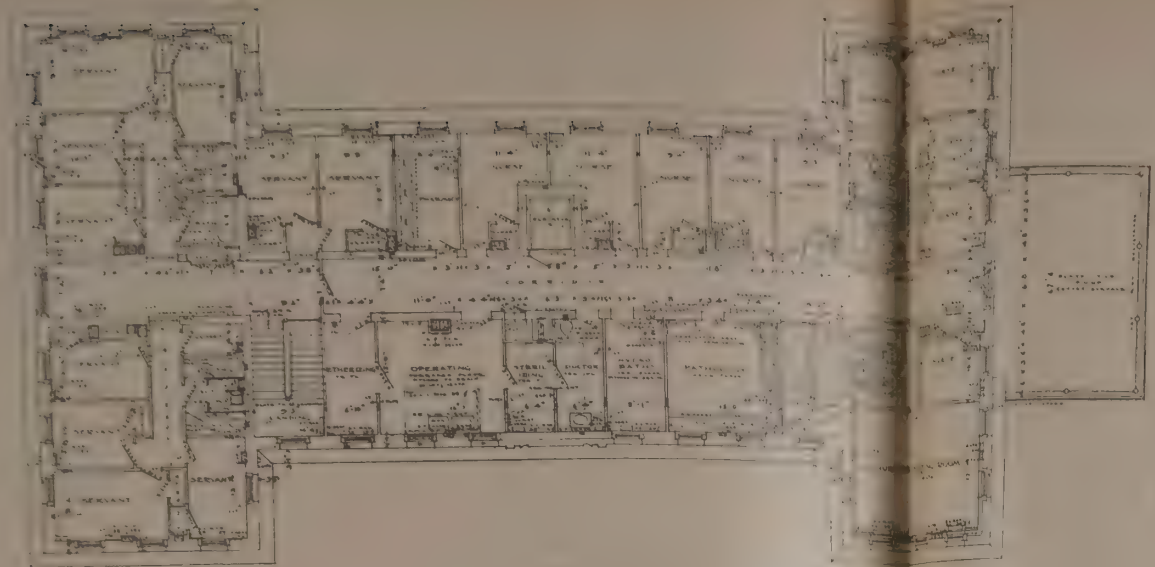
BEDFORD BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.
LORD & HEWLETT, ARCHITECTS. "



FAR ROCKAWAY BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.
LORD & HEWLETT, ARCHITECTS.



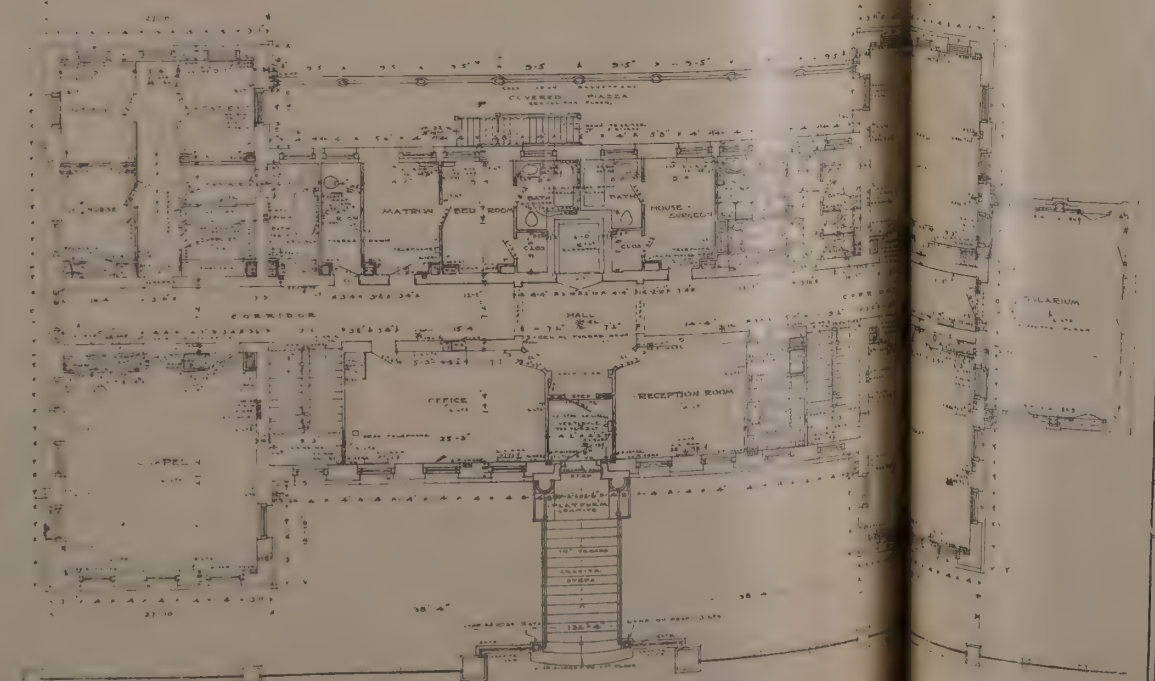
FRONT ELEVATION.



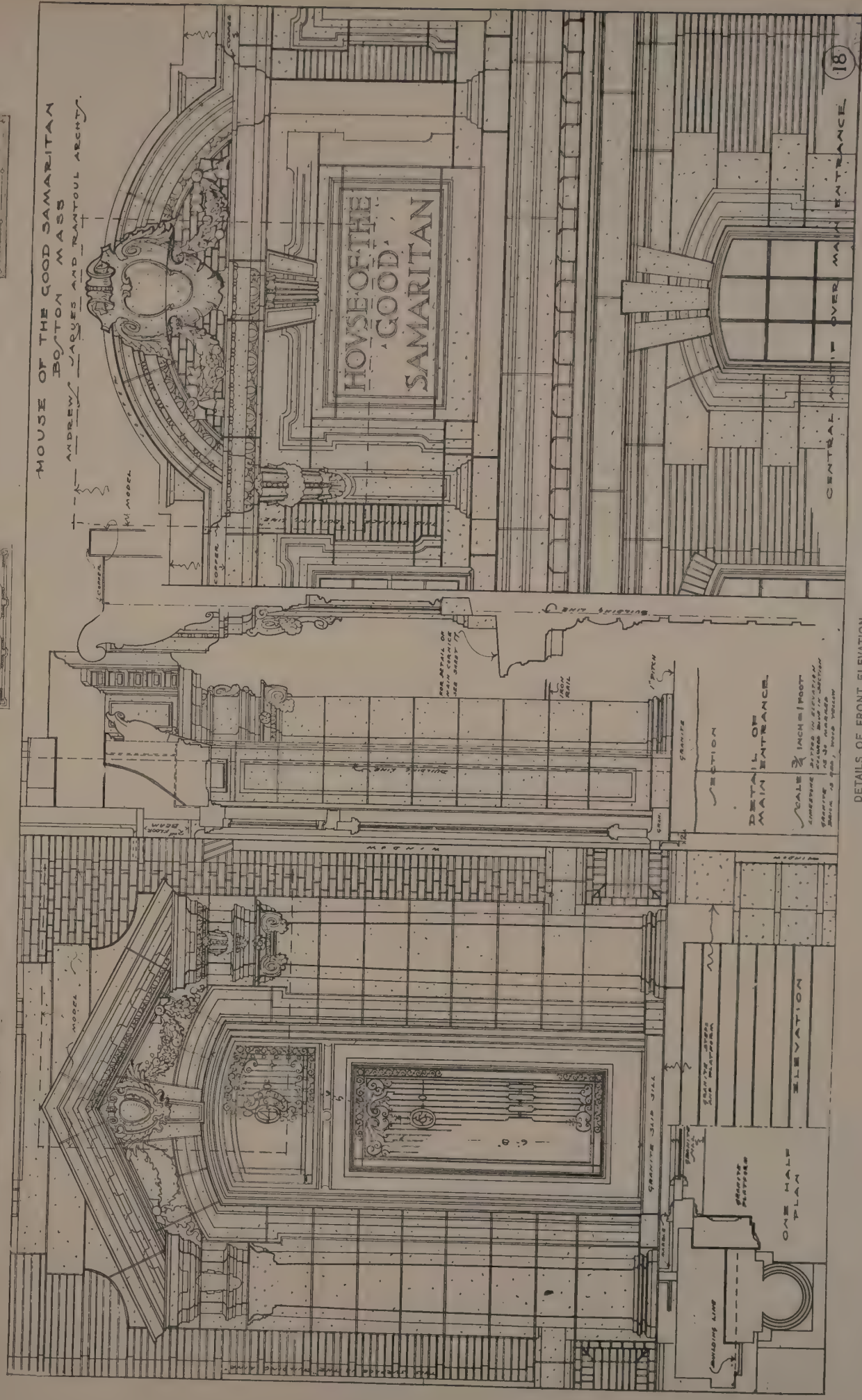
THIRD FLOOR PLAN.



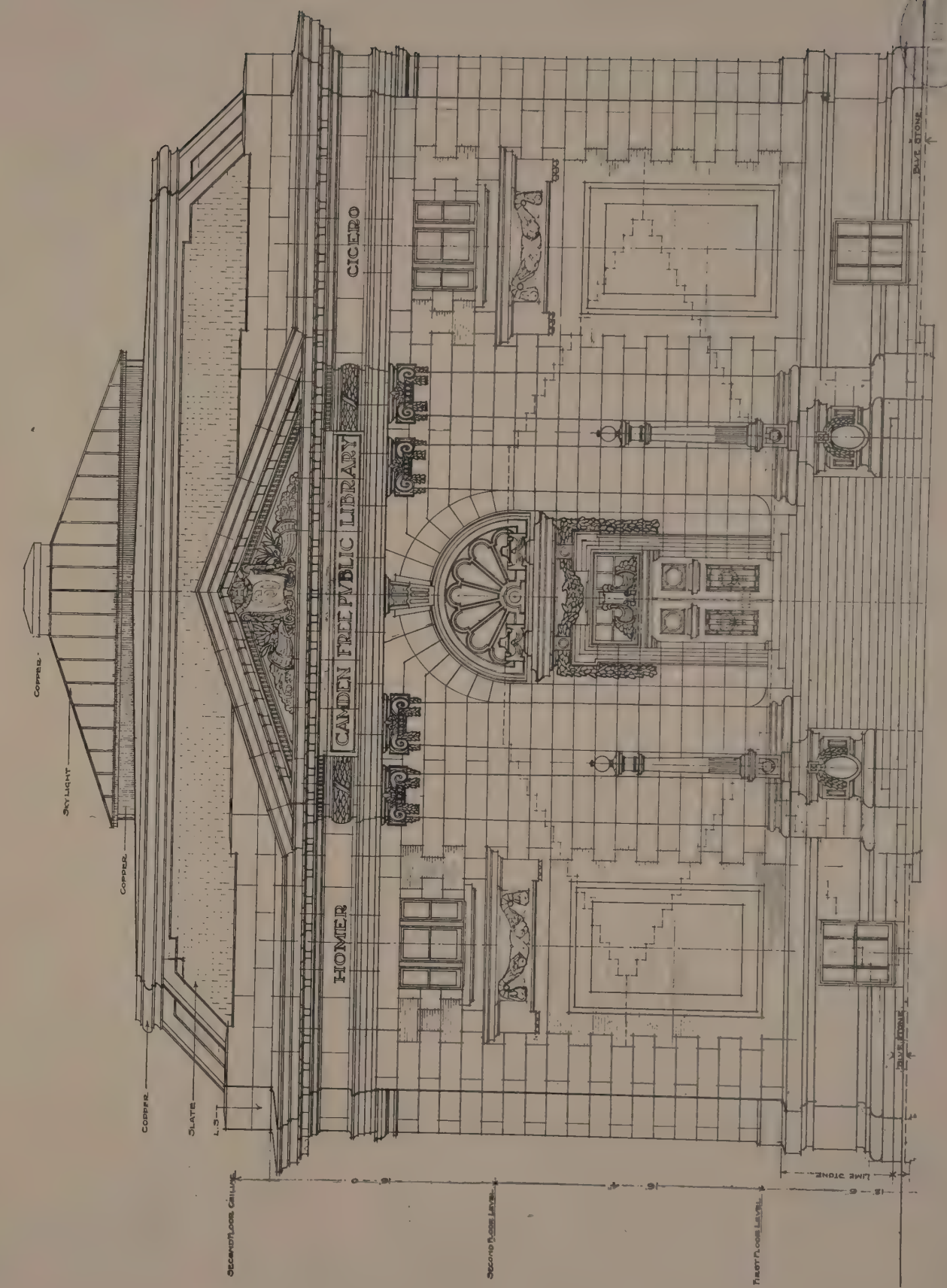
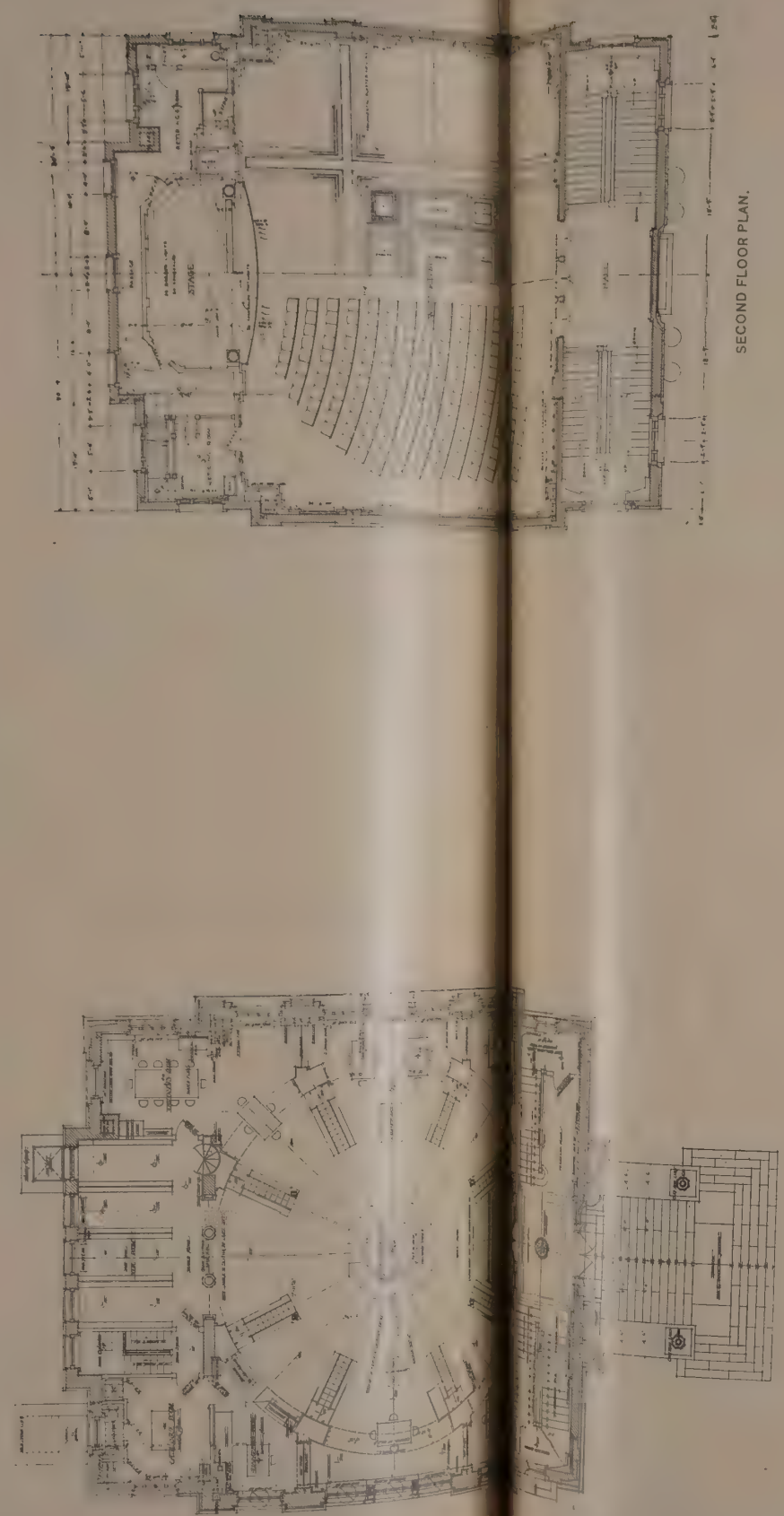
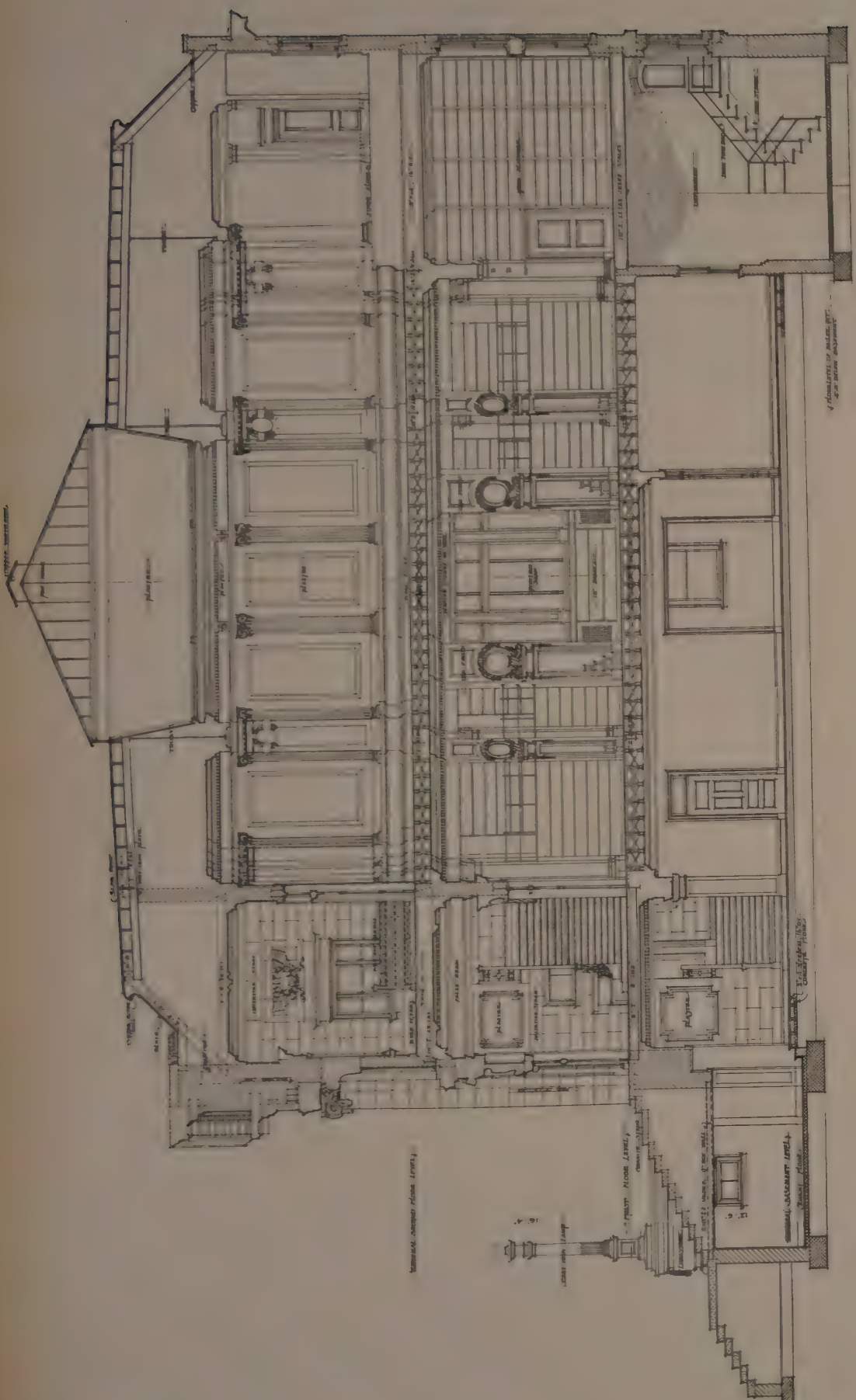
SECOND FLOOR PLAN.



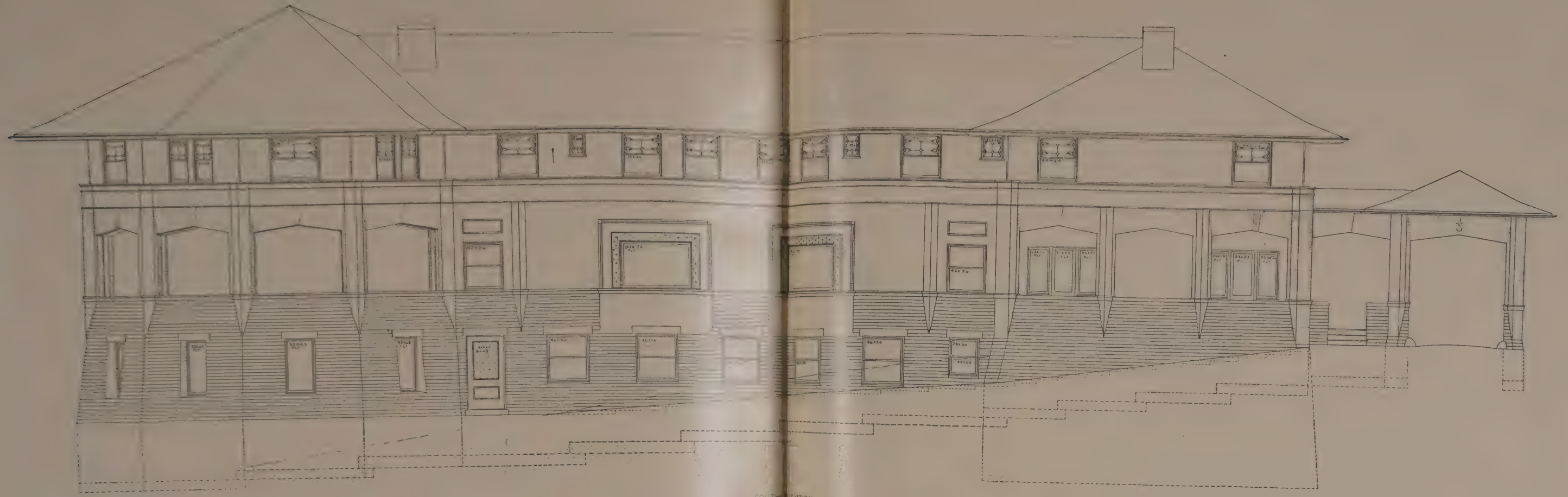
FIRST FLOOR PLAN.



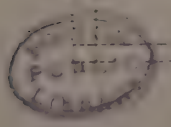
DETAILS OF FRONT ELEVATION.
HOUSE OF THE GOOD SAMARITAN, BOSTON, MASS.
ANDREWS, JAKES & RANTOUL, ARCHITECTS.



FRONT ELEVATION.
PUBLIC LIBRARY, CAMDEN, N. J.
HERBERT D. HALE AND HENRY G. MORSE, JR., ASSOCIATE ARCHITECTS.



SOUTH ELEVATION.

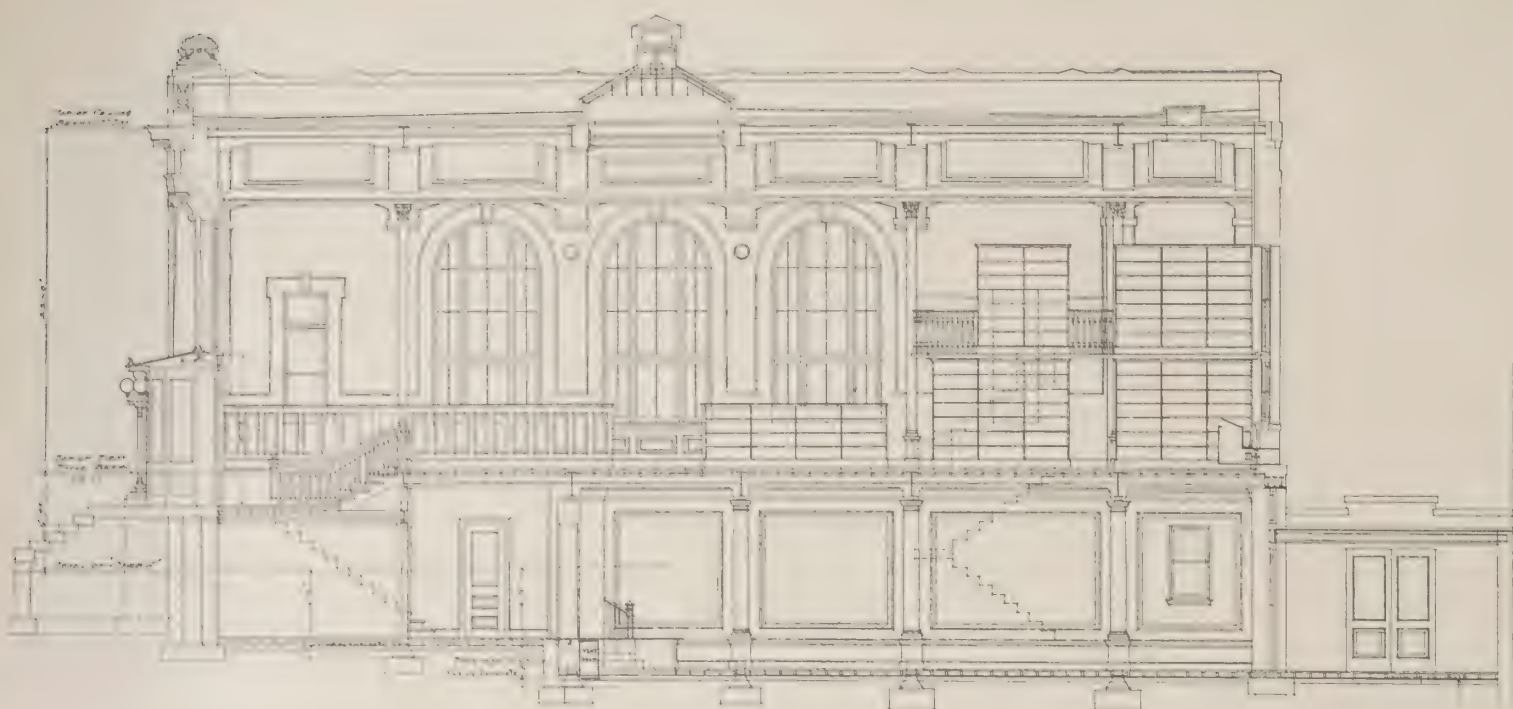


WEST ELEVATION

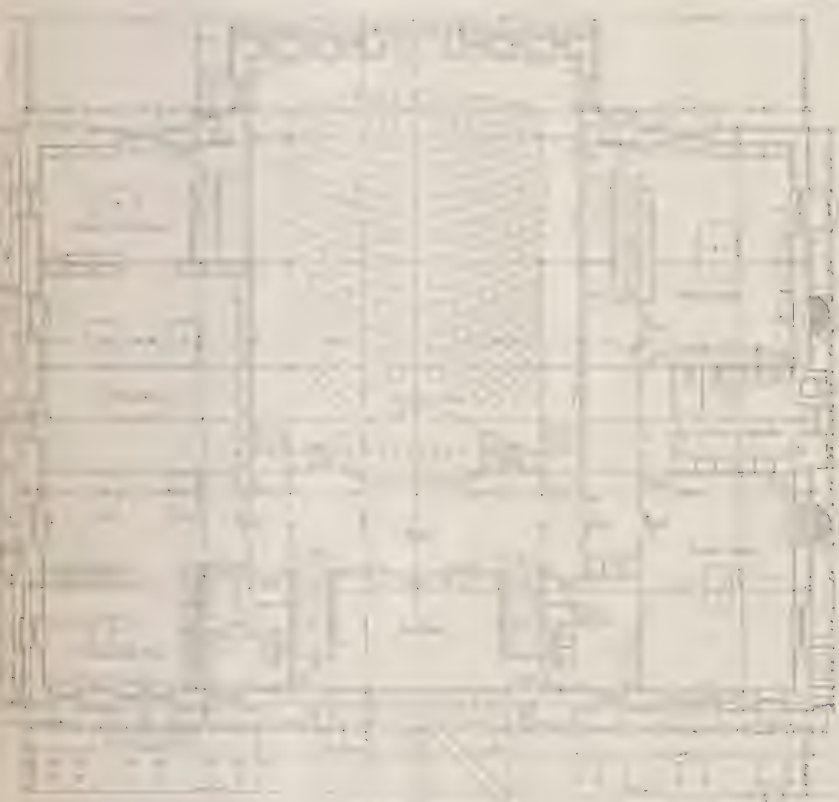


EAST ELEVATION

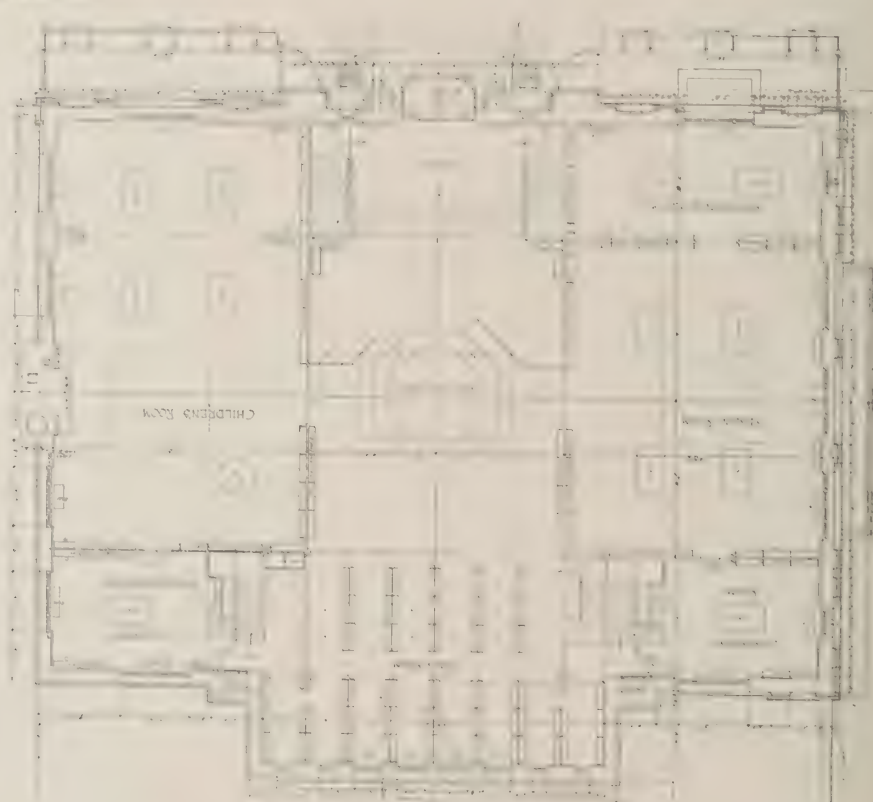
ELEVATIONS, CHAPTER HOUSE, CORNELL UNIVERSITY, ITHACA, N. Y.
GEORGE R. GORHAM, ARCHITECT.



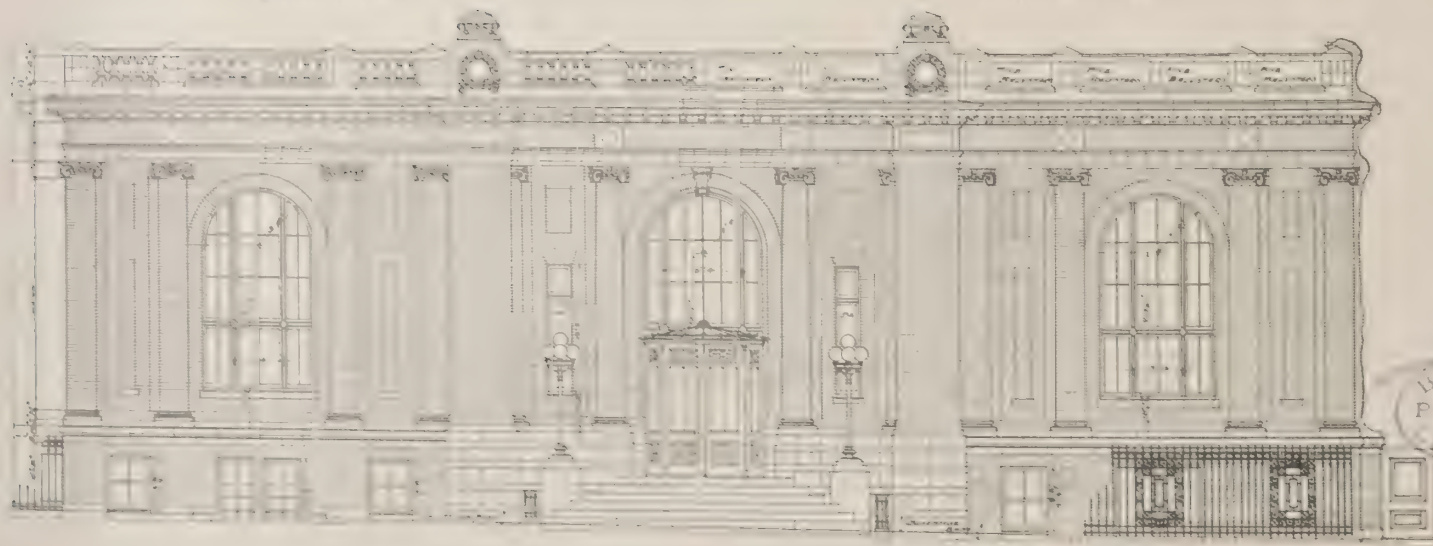
ARCHITECTURAL SECTION.



SECOND FLOOR PLAN.



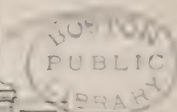
FIRST FLOOR PLAN.

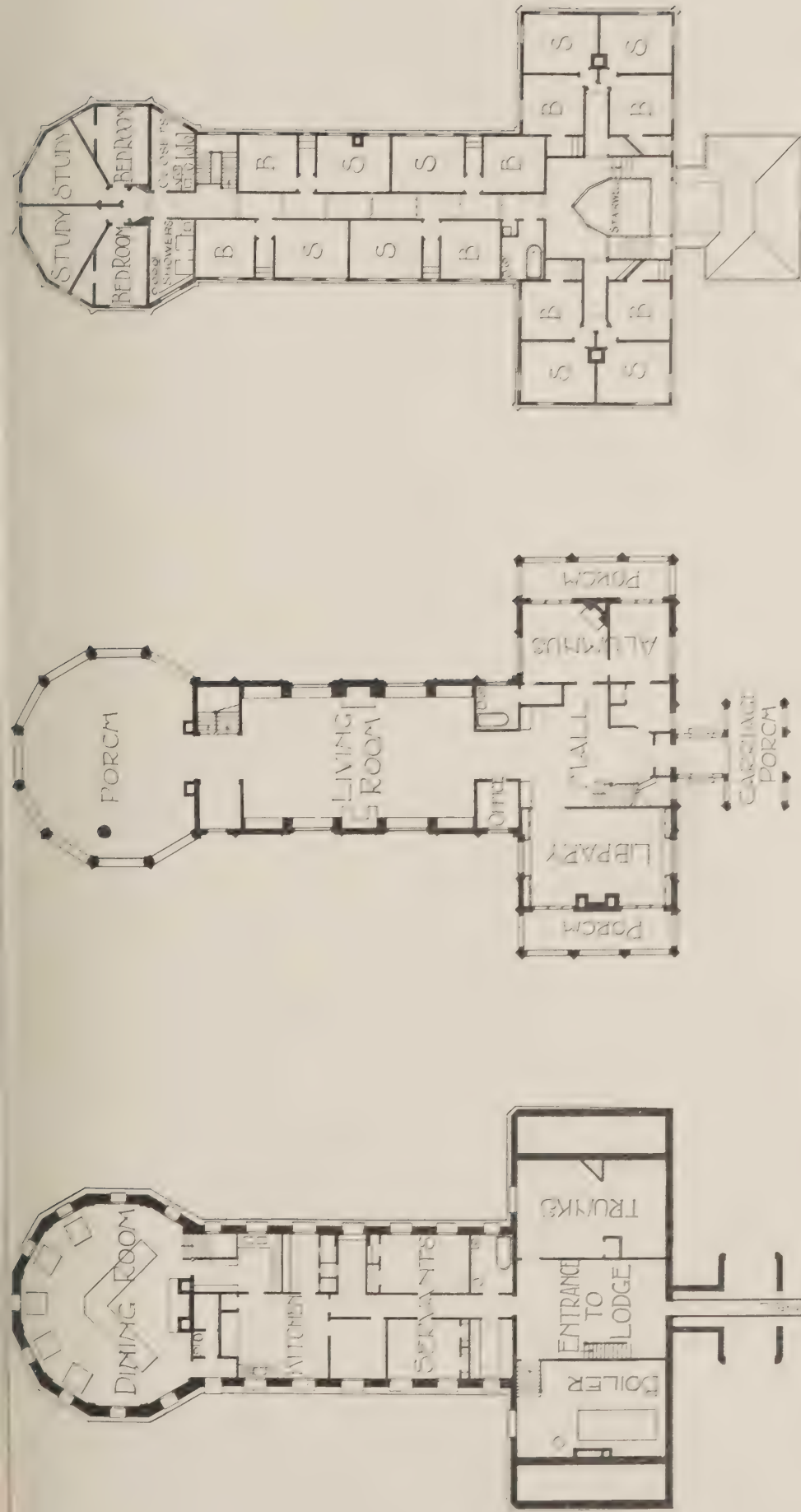


FRONT ELEVATION.

CARROLL PARK BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.

WILLIAM B. TUBBY & BRO., ARCHITECTS.

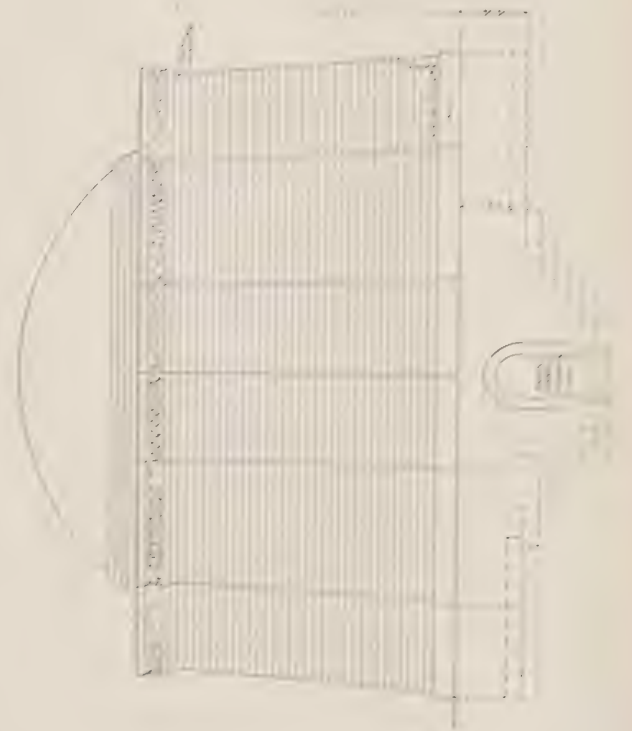
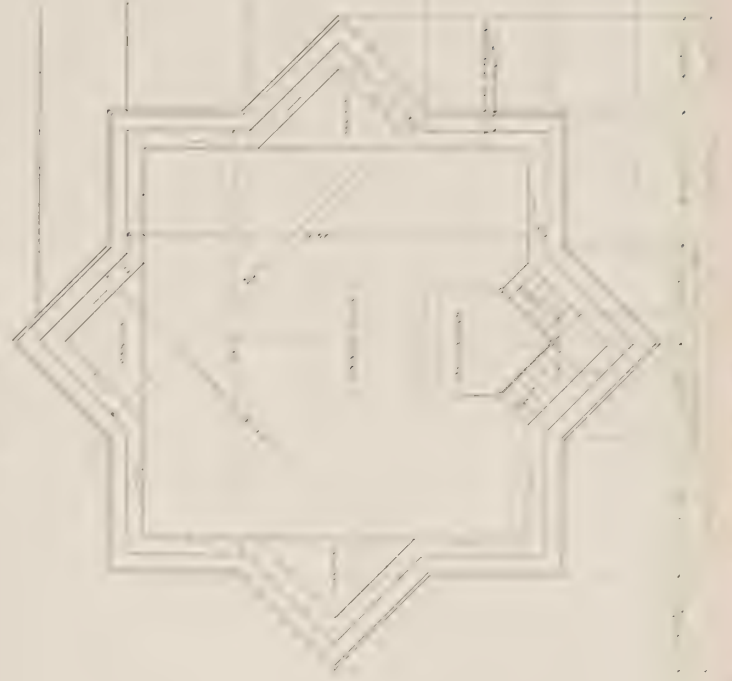




SECOND FLOOR

FIRST FLOOR

GROUND FLOOR





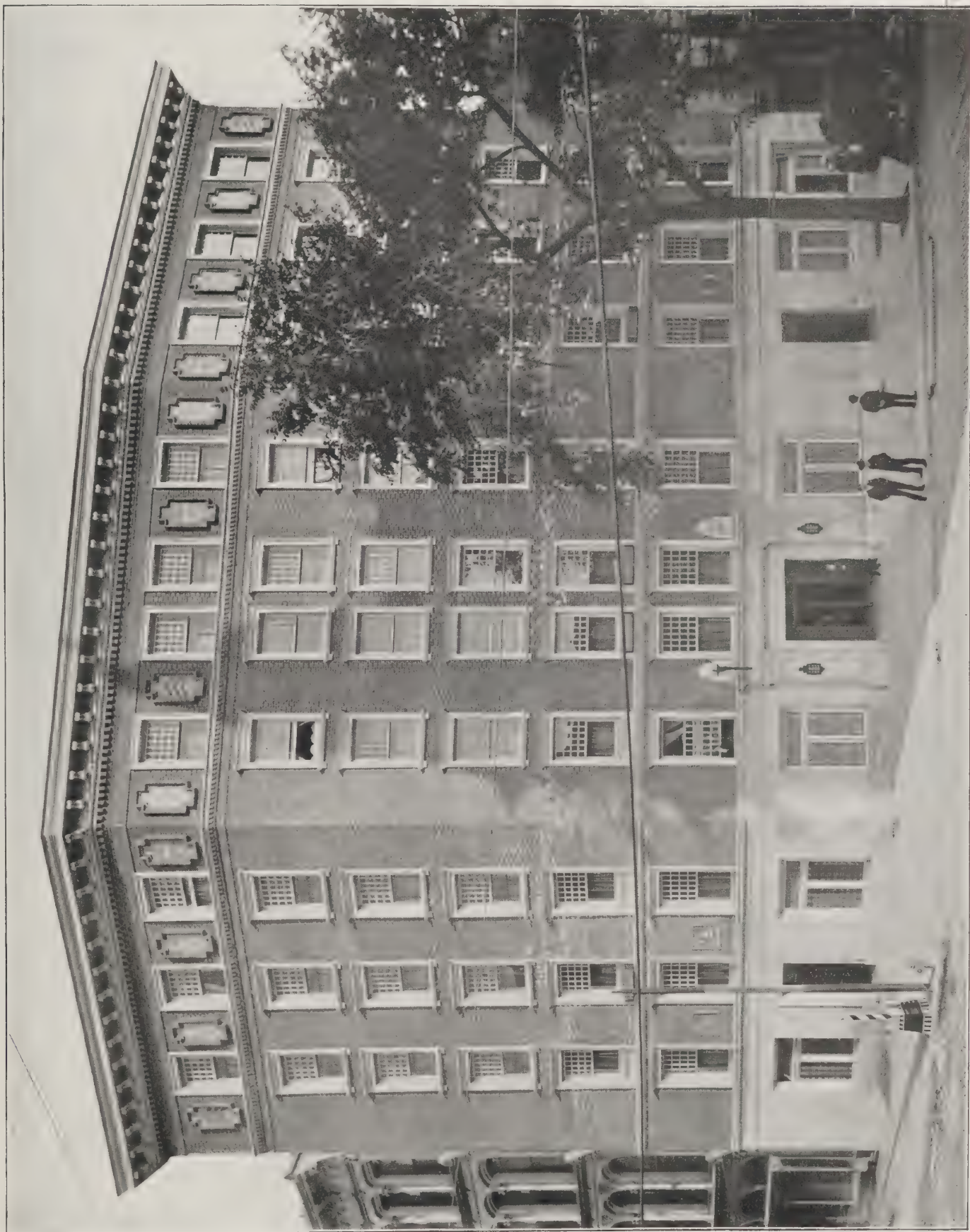
CARROLL PARK BRANCH, CARNEGIE LIBRARY, NEW YORK CITY.

WILLIAM B. TUBBY & BRO., ARCHITECTS.

THE BRICKBUILDER,
MAY,
1906.



HOUSE OF THE GOOD SAMARITAN, BOSTON, MASS.
ANDREWS, JAKES & RANTOUL, ARCHITECTS.



THE HOTEL RENSSELAER, TROY, N. Y.
WILLIAM L. WOOLLETT, ARCHITECT.

THE BRICKBUILDER,
MAY,
1908.



PUBLIC LIBRARY, CAMDEN, N. J.
HERBERT D. HALE AND HENRY G. MORSE, JR., ASSOCIATE ARCHITECTS.



MAIN LOBBY, THE HOTEL RENSSELAER, TROY, N. Y.
WILLIAM L. WOOLLETT, ARCHITECT.



FRONT OF HOUSE.

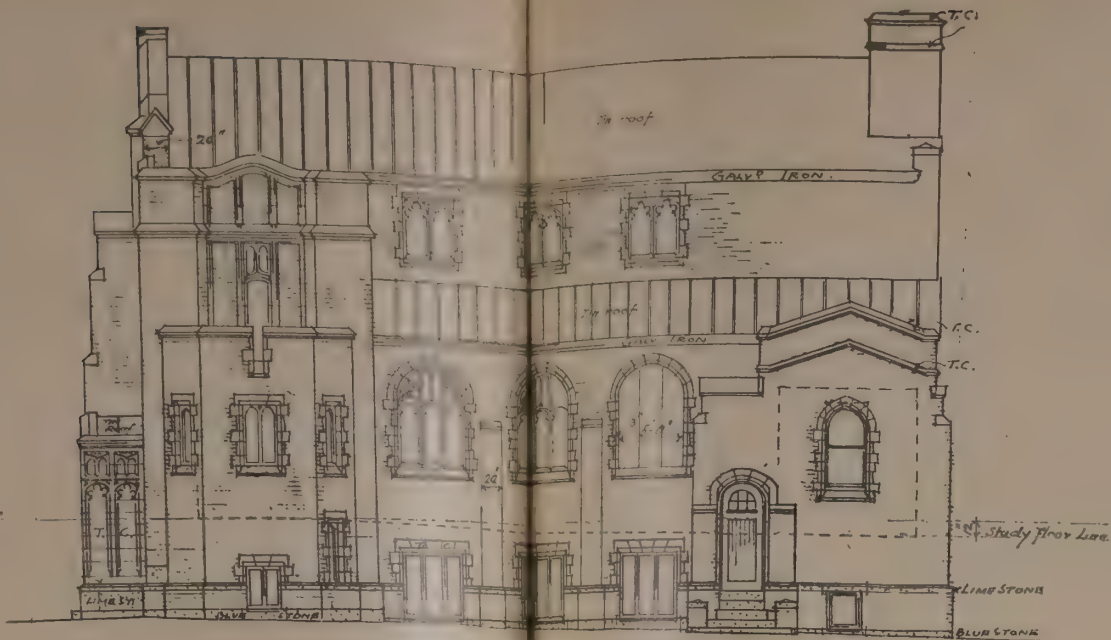


SIDE OF HOUSE.

CHAPTER HOUSE, CORNELL UNIVERSITY, ITHACA, N. Y.
GEORGE R. DEAN, ARCHITECT.



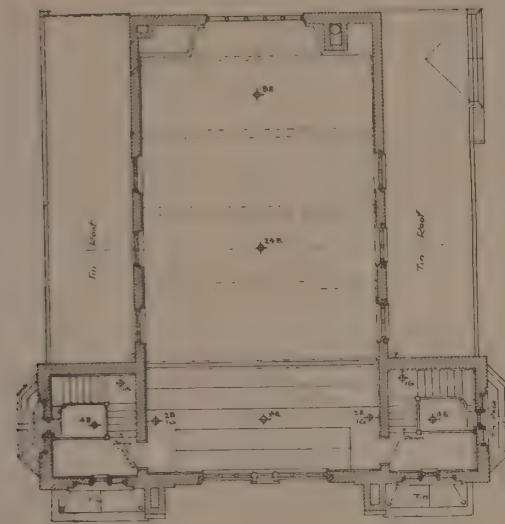
FRONT ELEVATION.



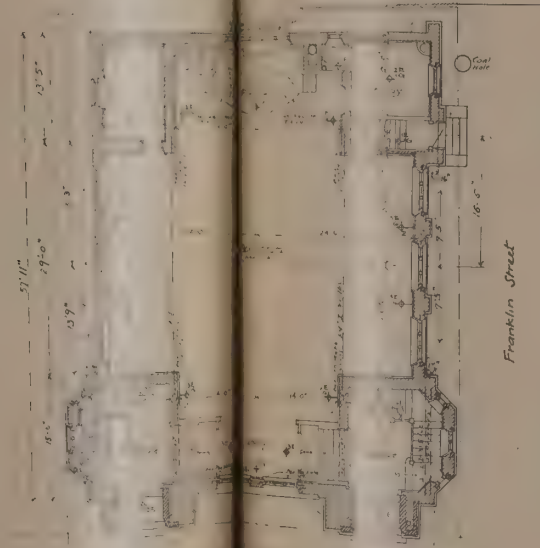
SIDE ELEVATION.



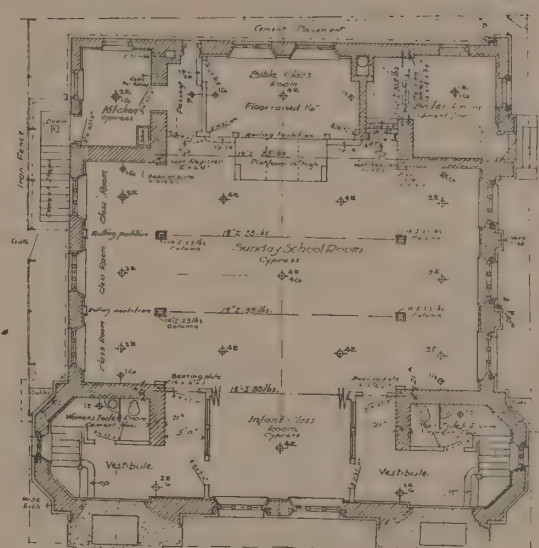
REAR ELEVATION.



GALLERY PLAN.



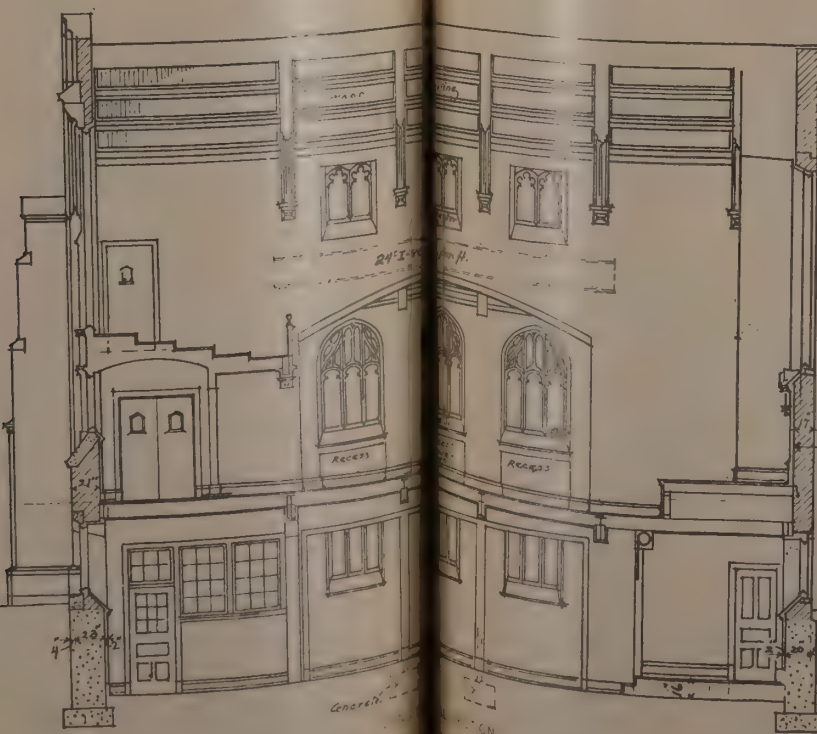
FIRST FLOOR PLAN.



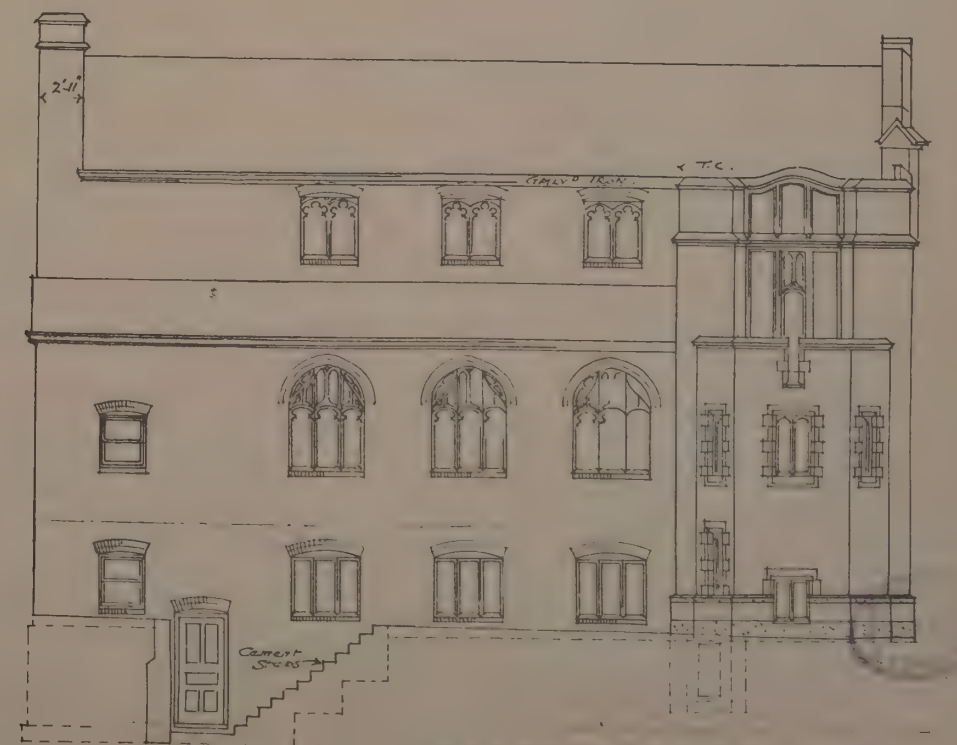
BASEMENT PLAN.



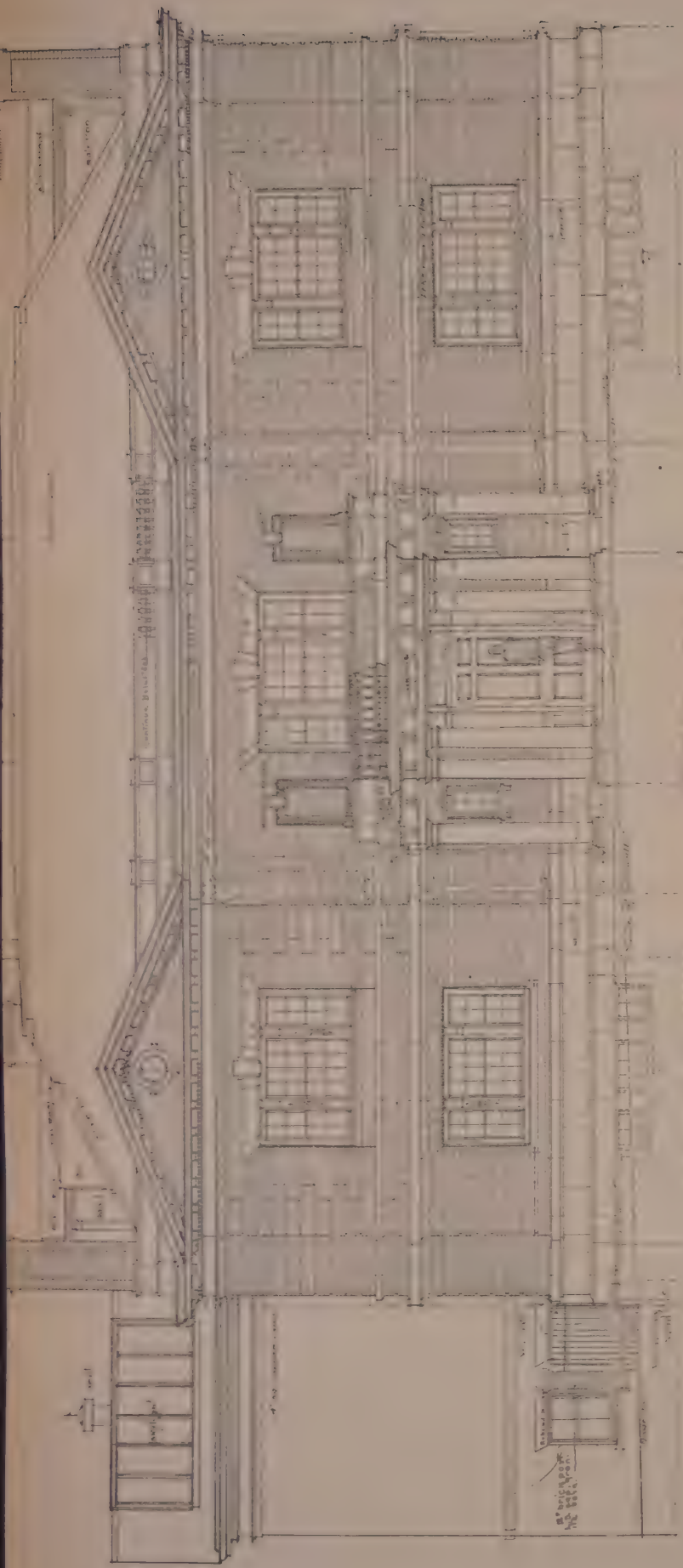
TRANSVERSE SECTION.



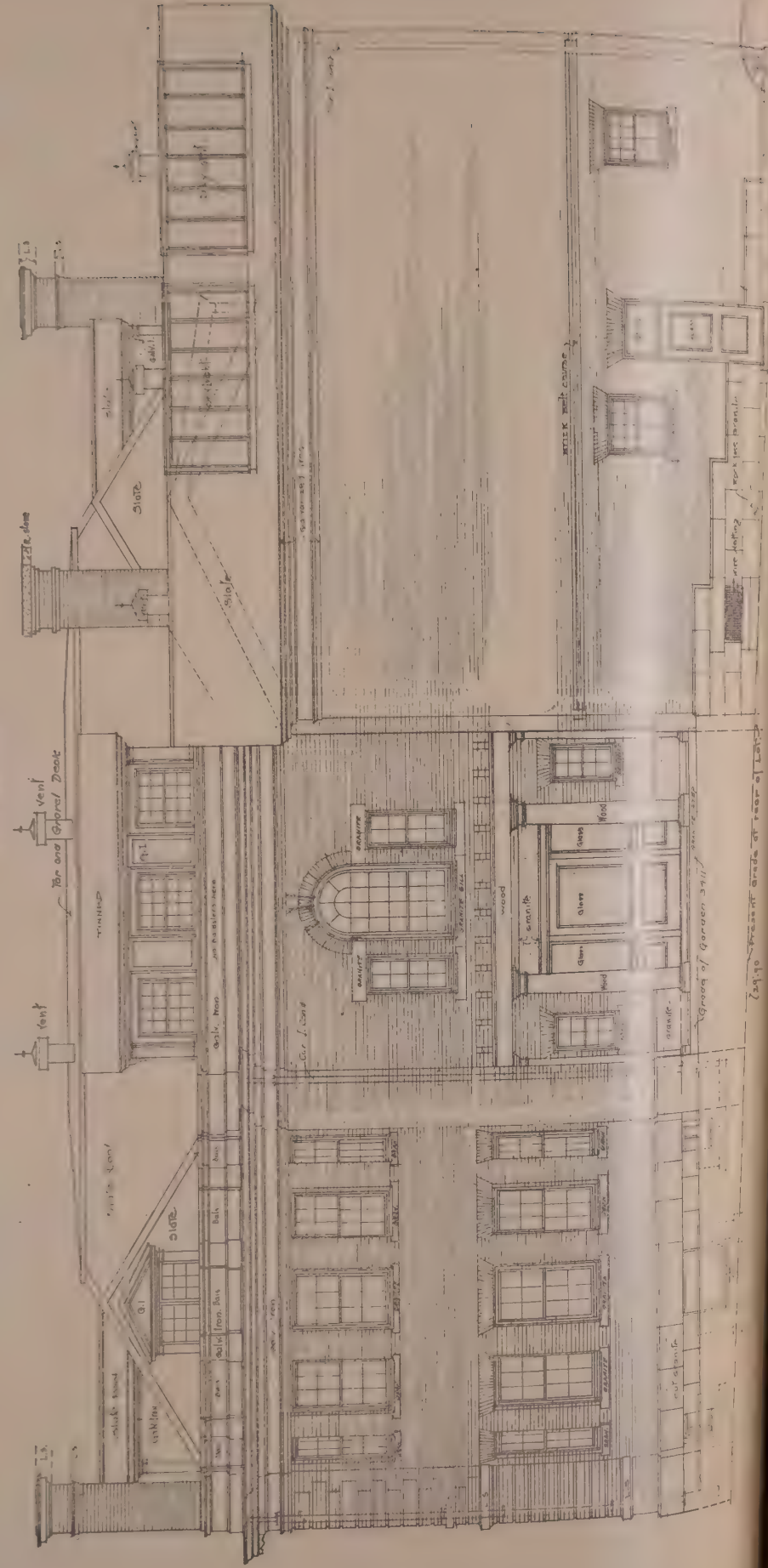
PRESBYTERIAN CHURCH, FRANKLIN AND RUPPIN STREETS, PHILADELPHIA, PA.



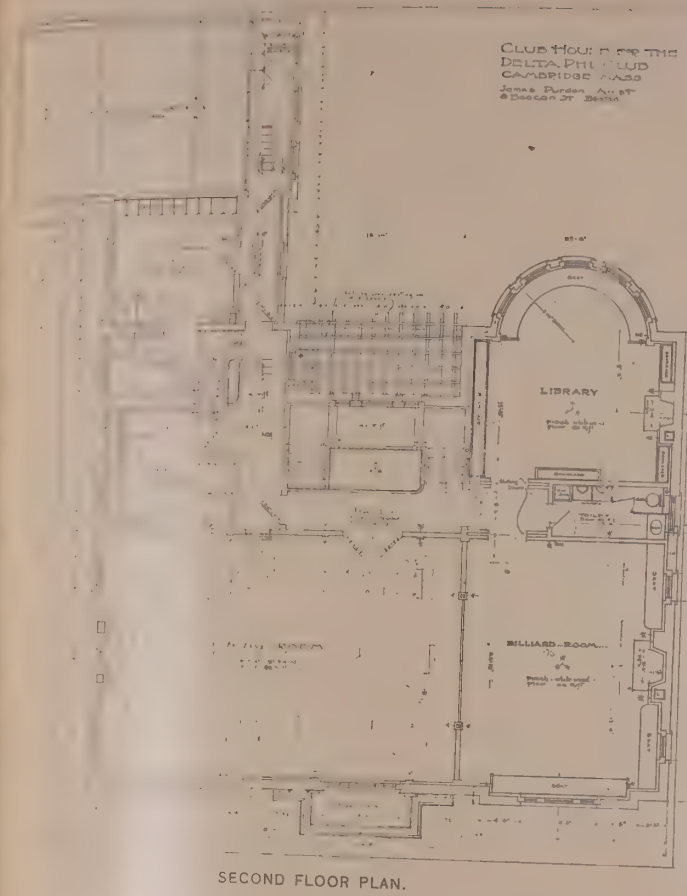
SIDE ELEVATION.



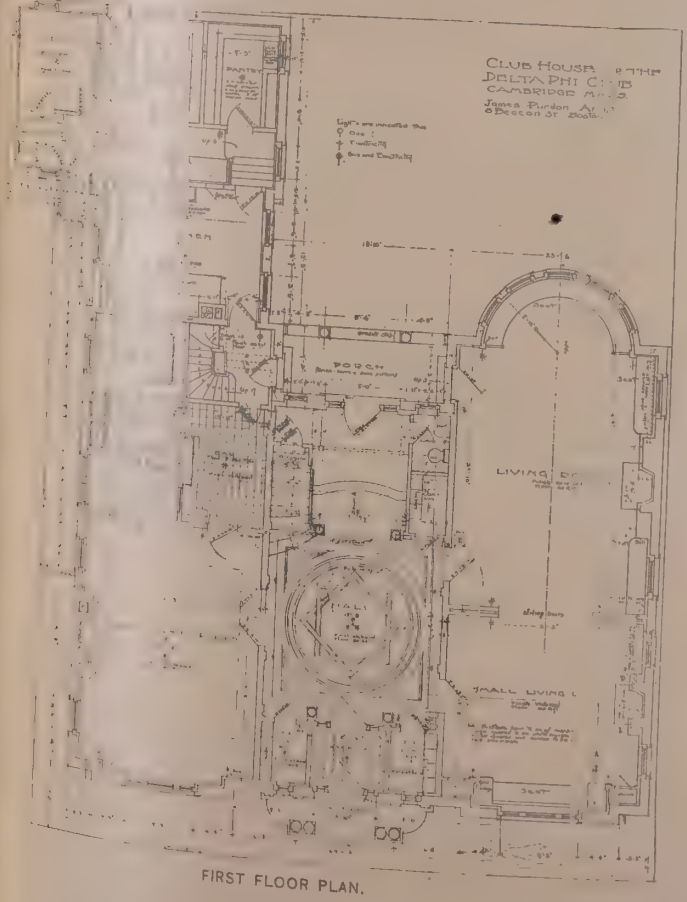
FRONT ELEVATION.



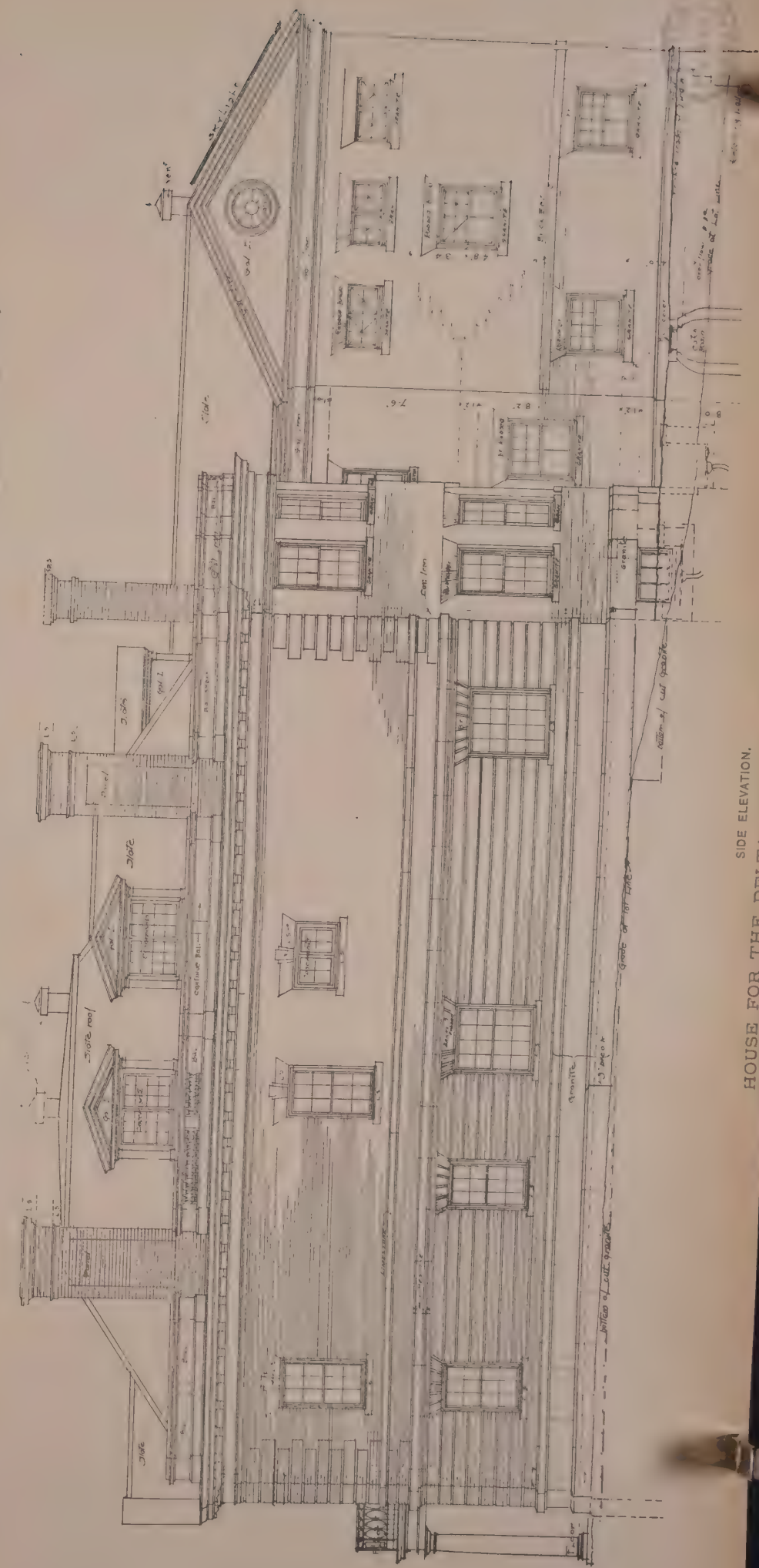
REAR ELEVATION.



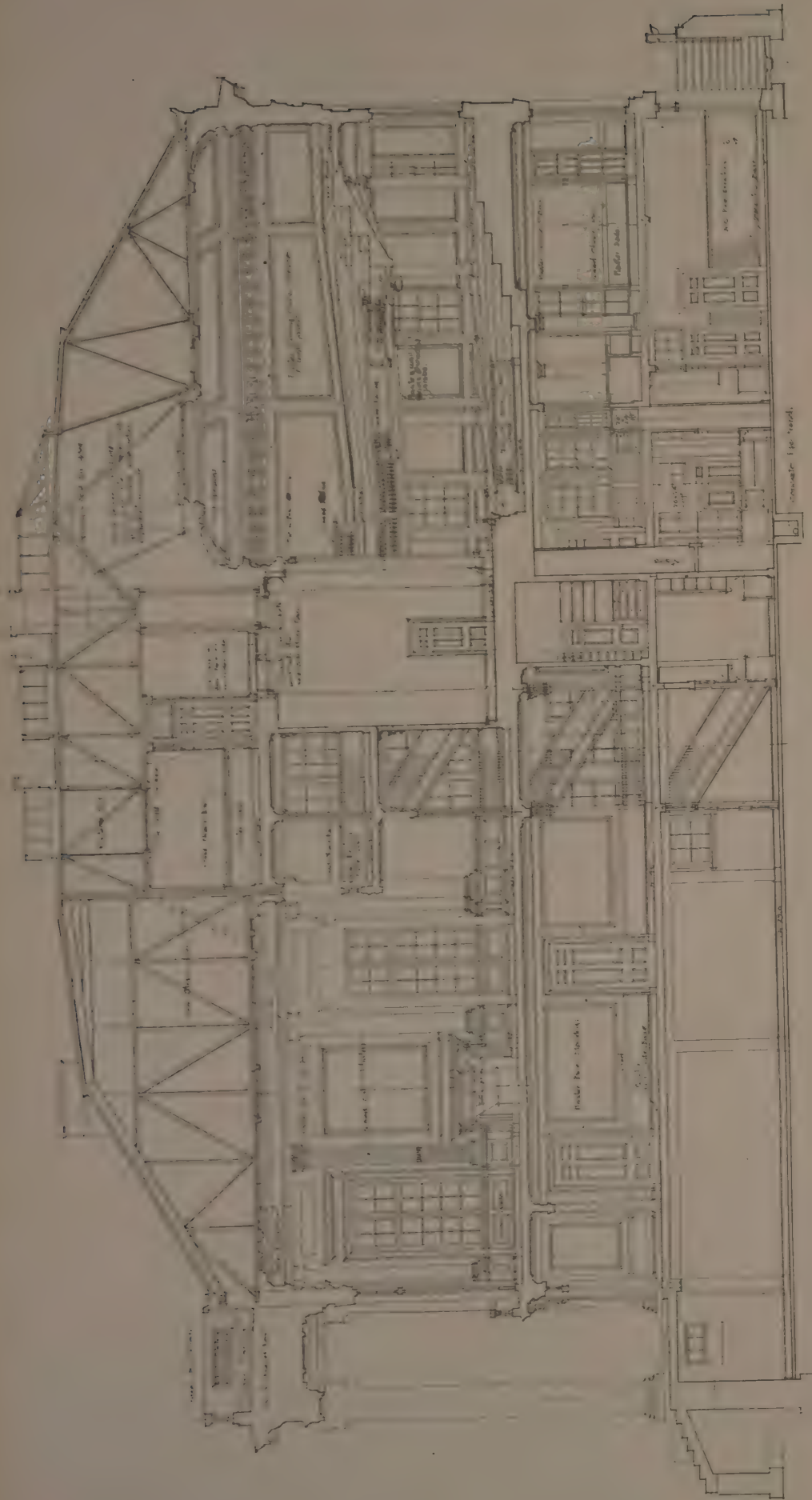
SECOND FLOOR PLAN.



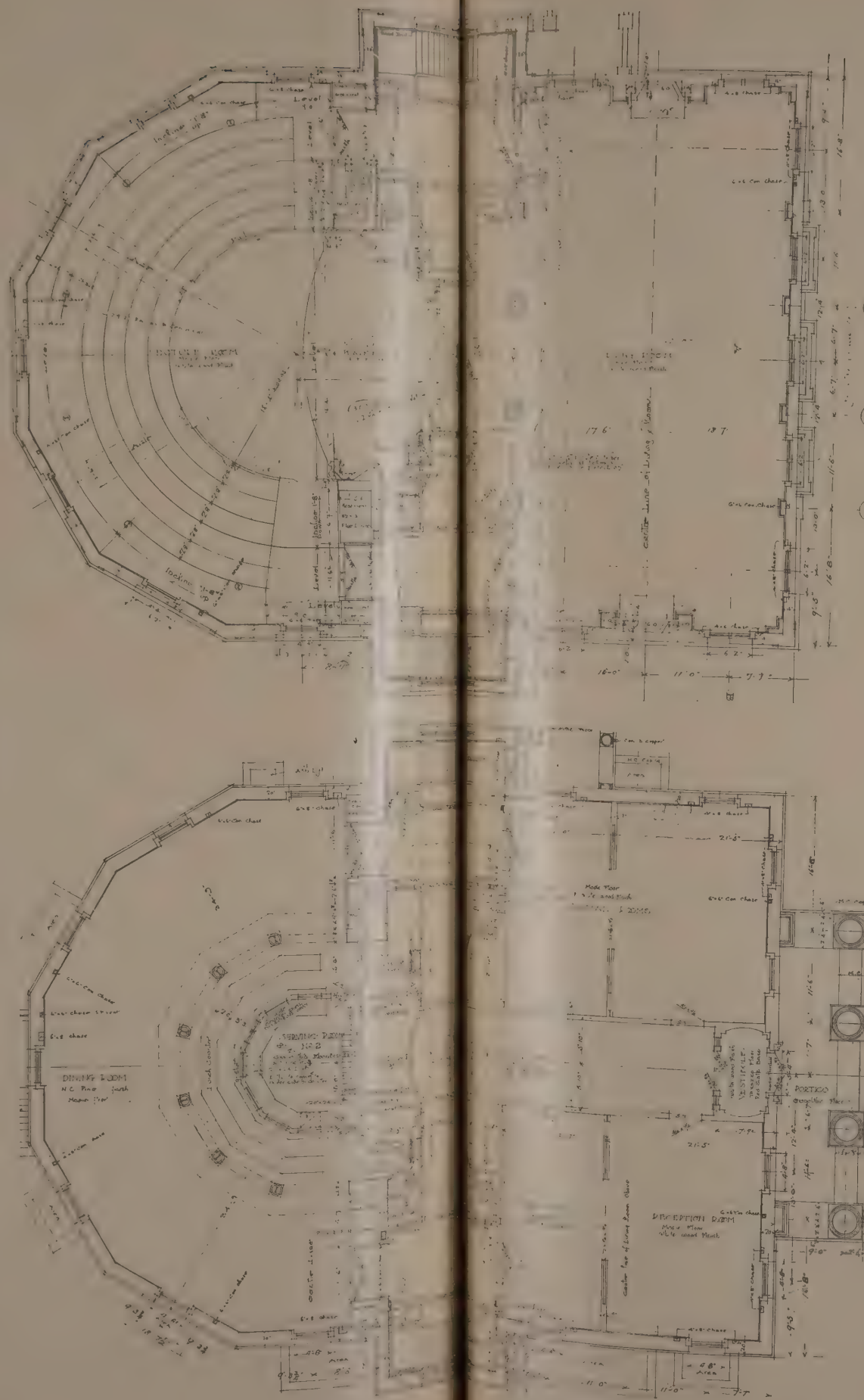
FIRST FLOOR PLAN.



SIDE ELEVATION.
HOUSE FOR THE DELTA PHI CLUB, CAMBRIDGE, MASS.

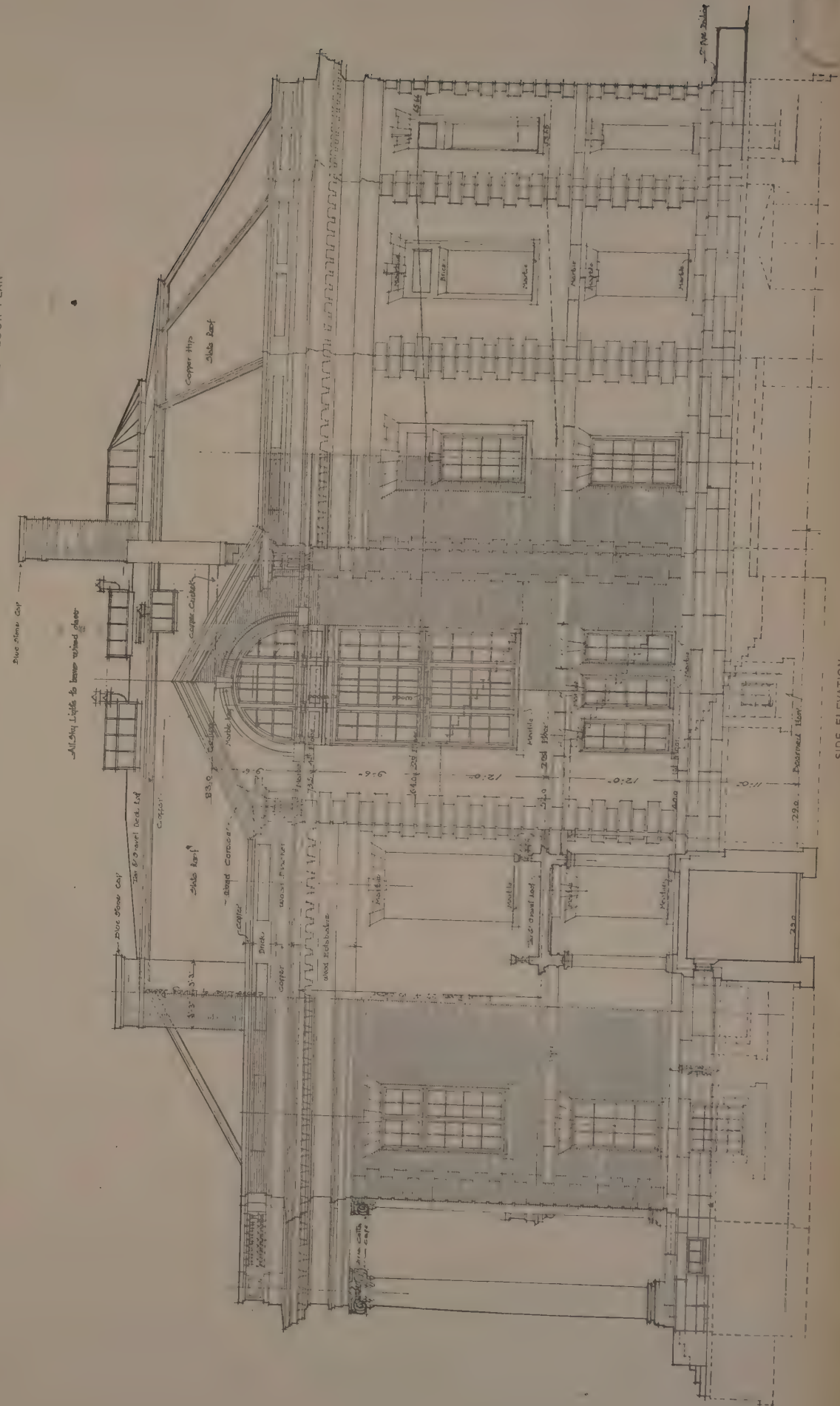


LONGITUDINAL SECTION.

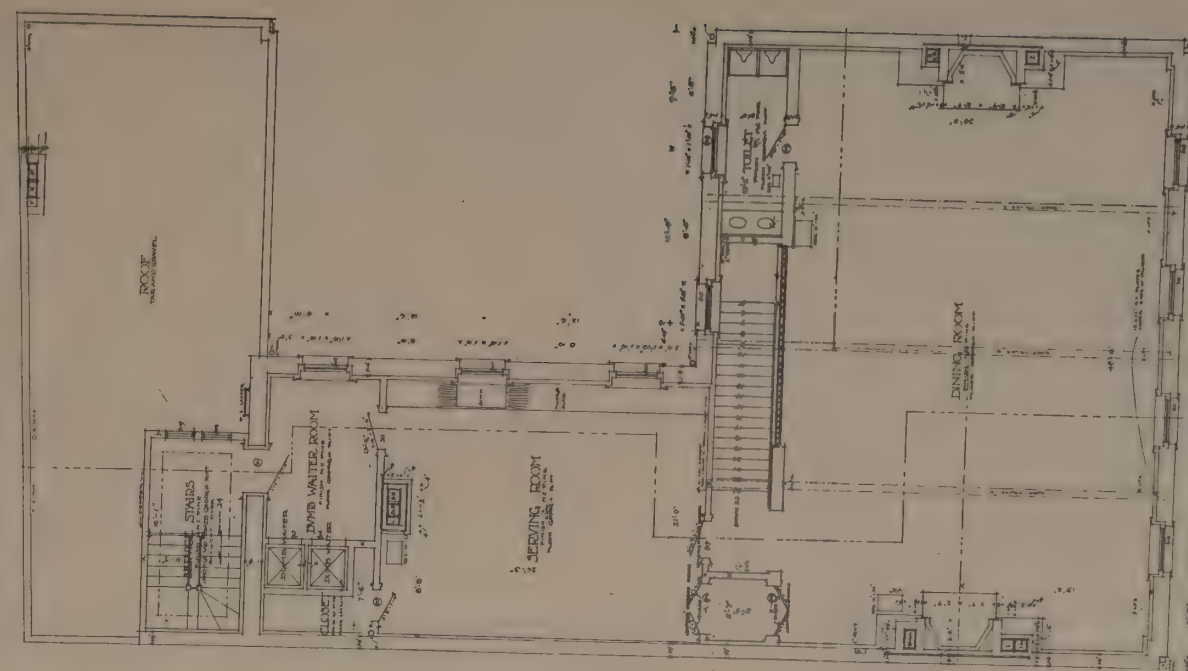
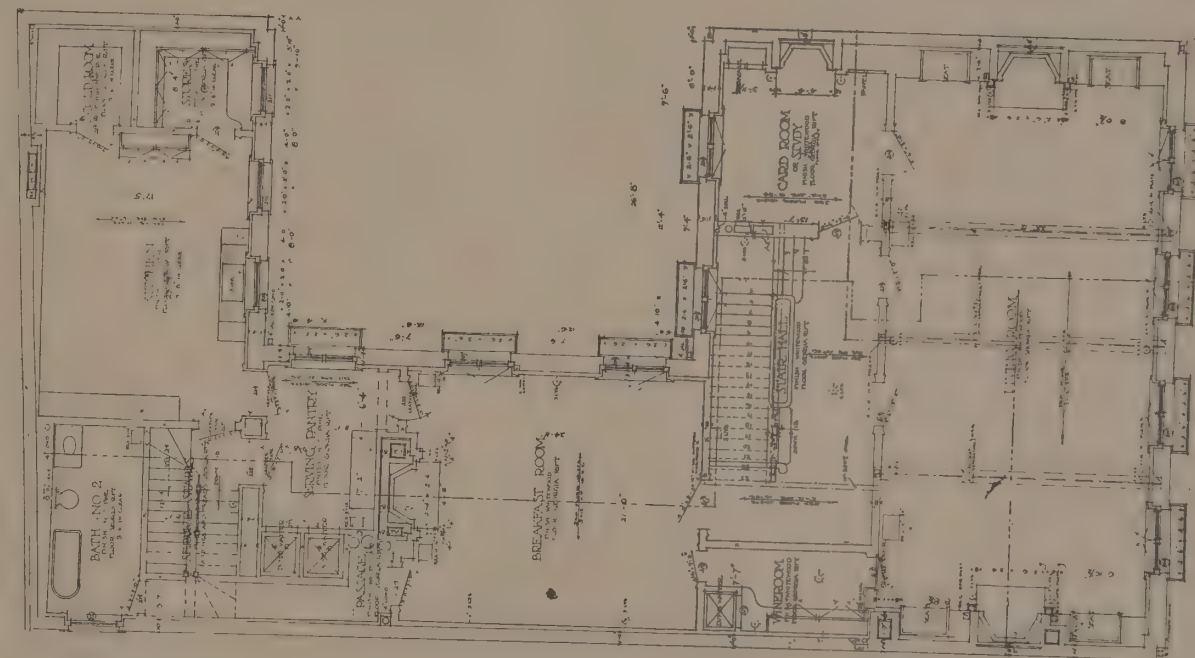
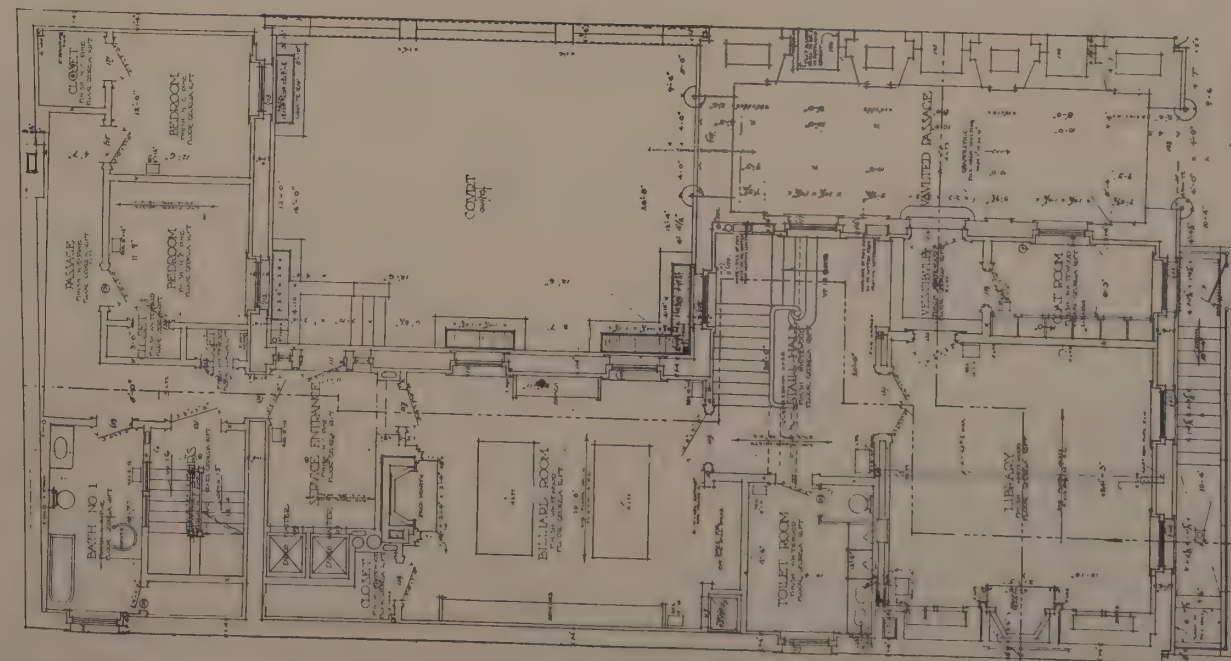
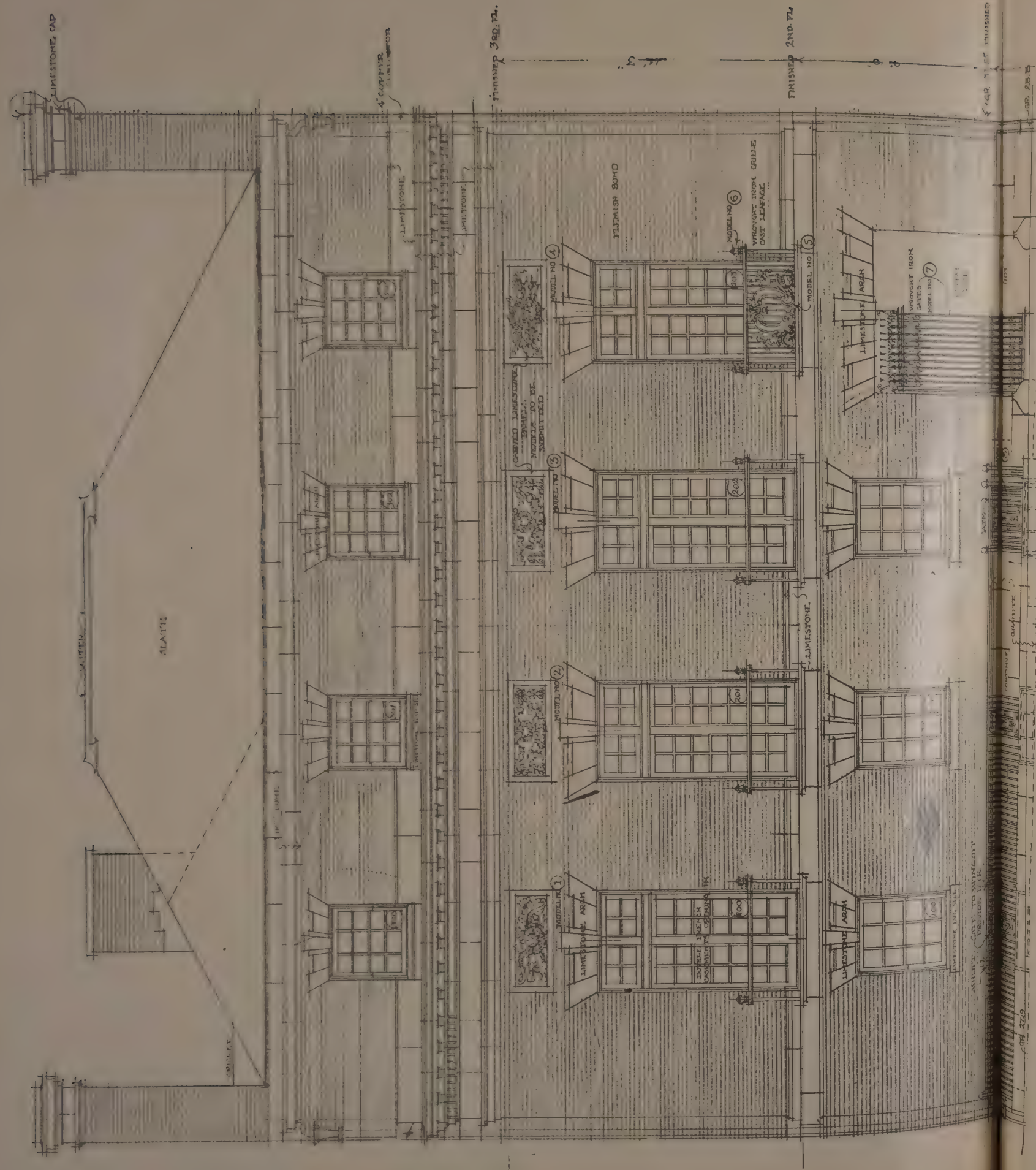


FIRST FLOOR PLAN.

SECOND FLOOR PLAN.



SIDE ELEVATION.



FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

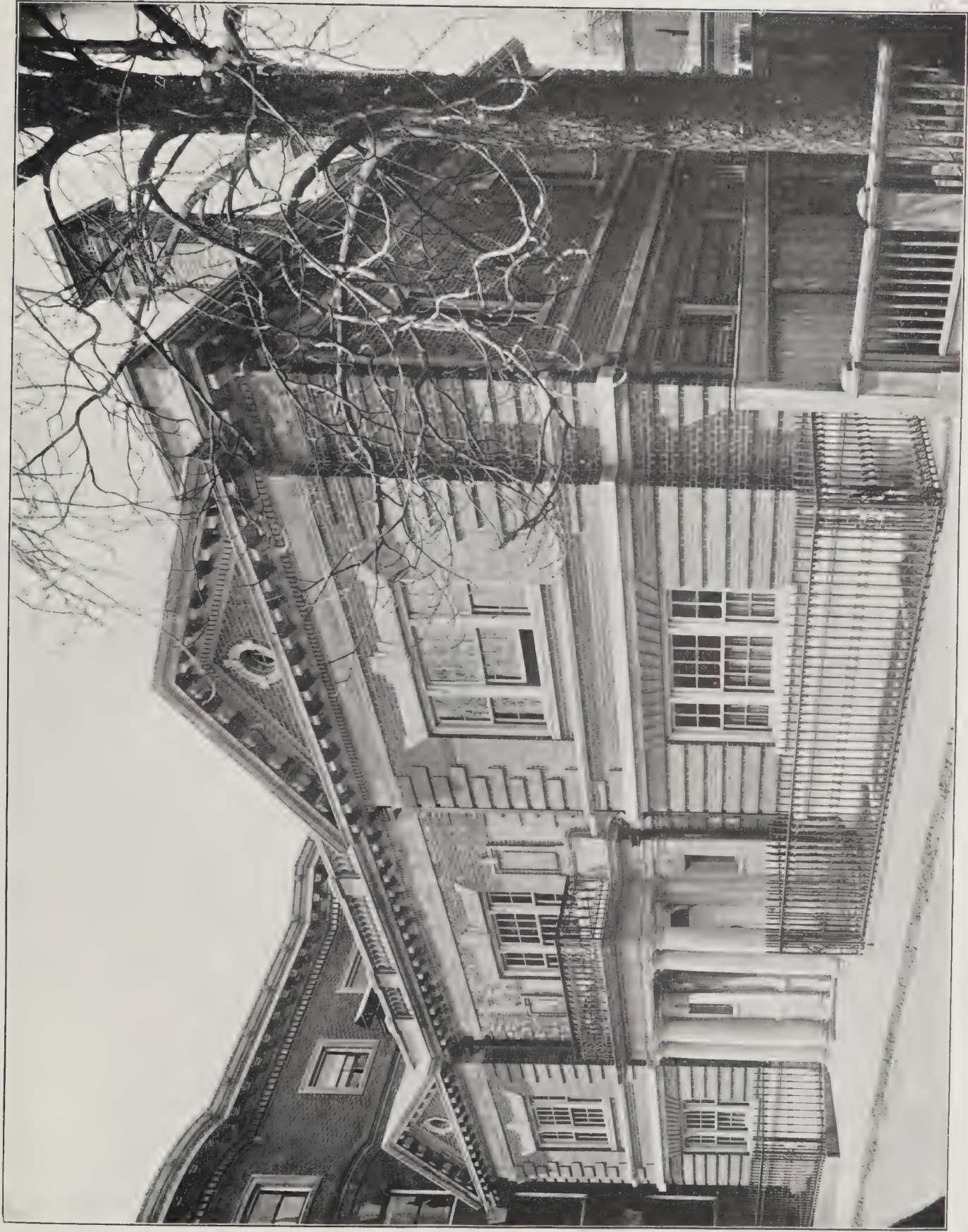
THIRD FLOOR PLAN.

HOUSE FOR THE ZETA PSI CLUB, CAMBRIDGE, MASS.
GUY LOWELL, ARCHITECT.



PRESBYTERIAN CHURCH, FRANKLIN AND DAUPHIN STREETS PHILADELPHIA, PA.
EDGAR V. SEELER, ARCHITECT.

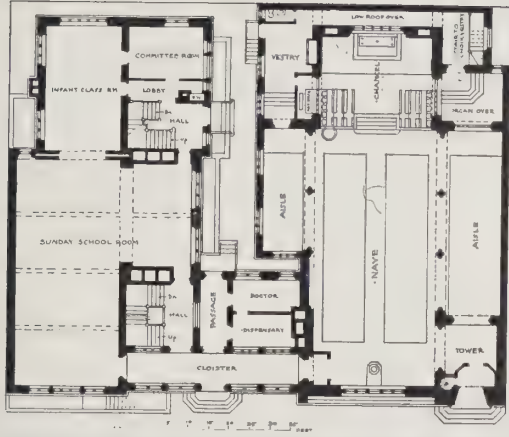




HOUSE FOR THE DELTA PHI CLUB, CAMBRIDGE, MASS.
JAMES PURDON, ARCHITECT.



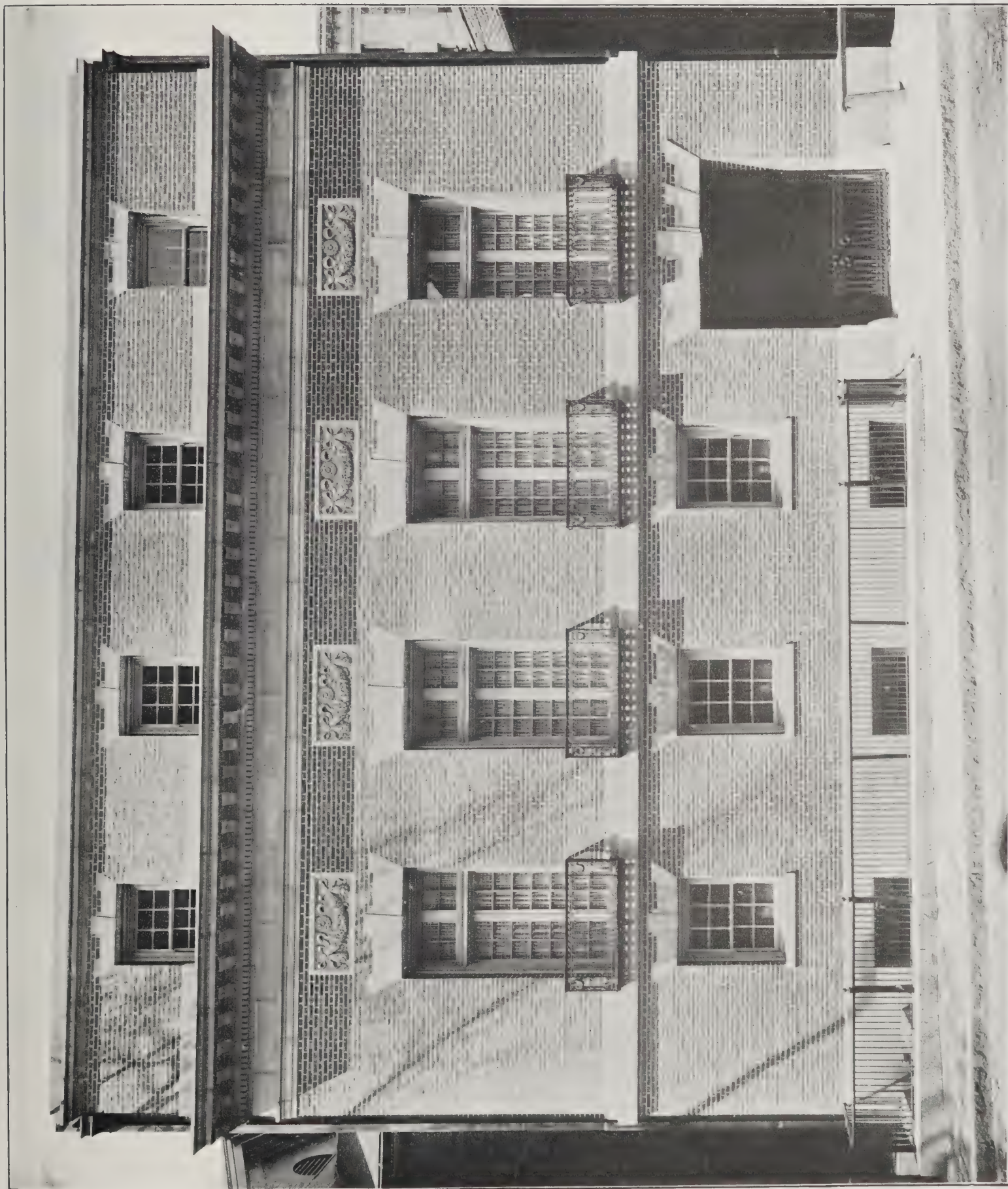
STORE BUILDING, CHESTNUT STREET, PHILADELPHIA, PA.
WILLIAM L. PRICE, ARCHITECT.



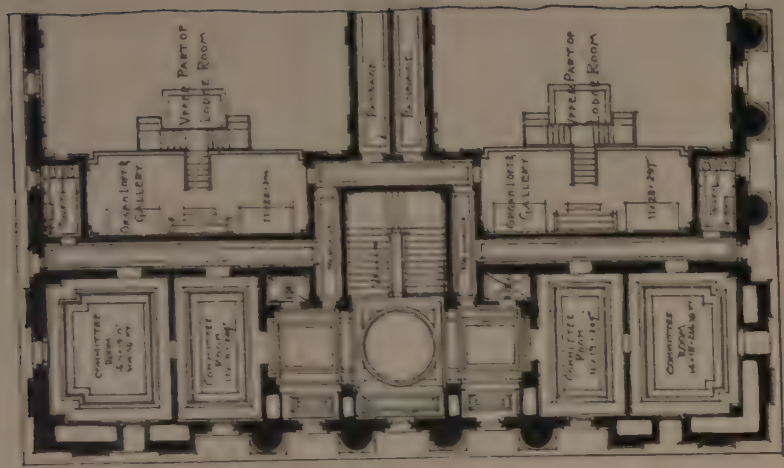
PARISH HOUSE AND CHAPEL OF THE INCARNATION, EAST THIRTY-FIRST STREET, NEW YORK CITY.
HENRY VAUGHAN, ARCHITECT.



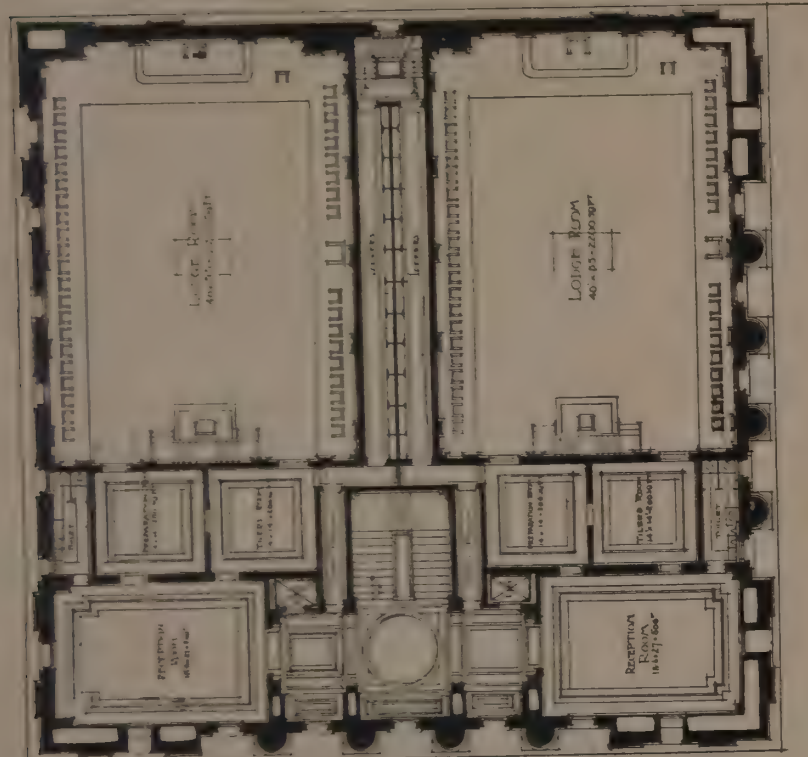
ELIZABETH CARY AGASSIZ HOUSE, RADCLIFFE COLLEGE, CAMBRIDGE, MASS.
A. W. LONGFELLOW, ARCHITECT.



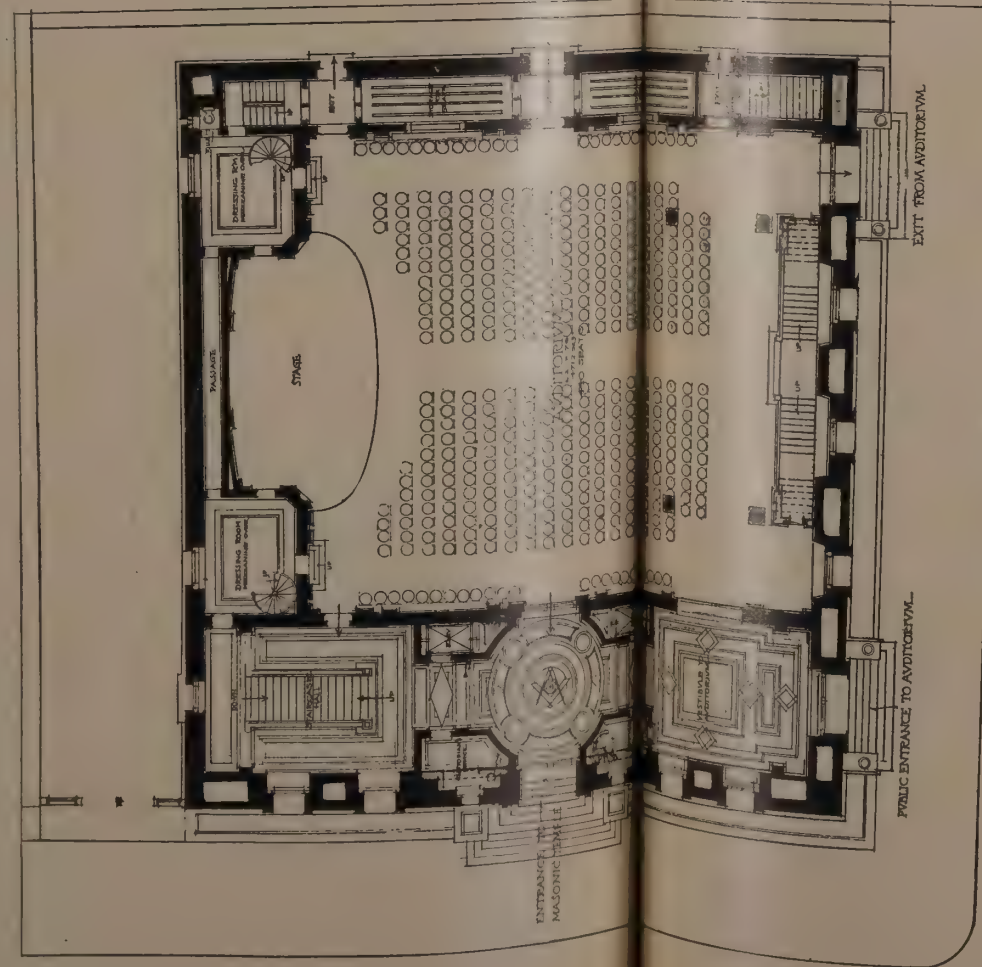
HOUSE FOR THE ZETA PSI CLUB, CAMBRIDGE, MASS.
GUY LOWELL, ARCHITECT.



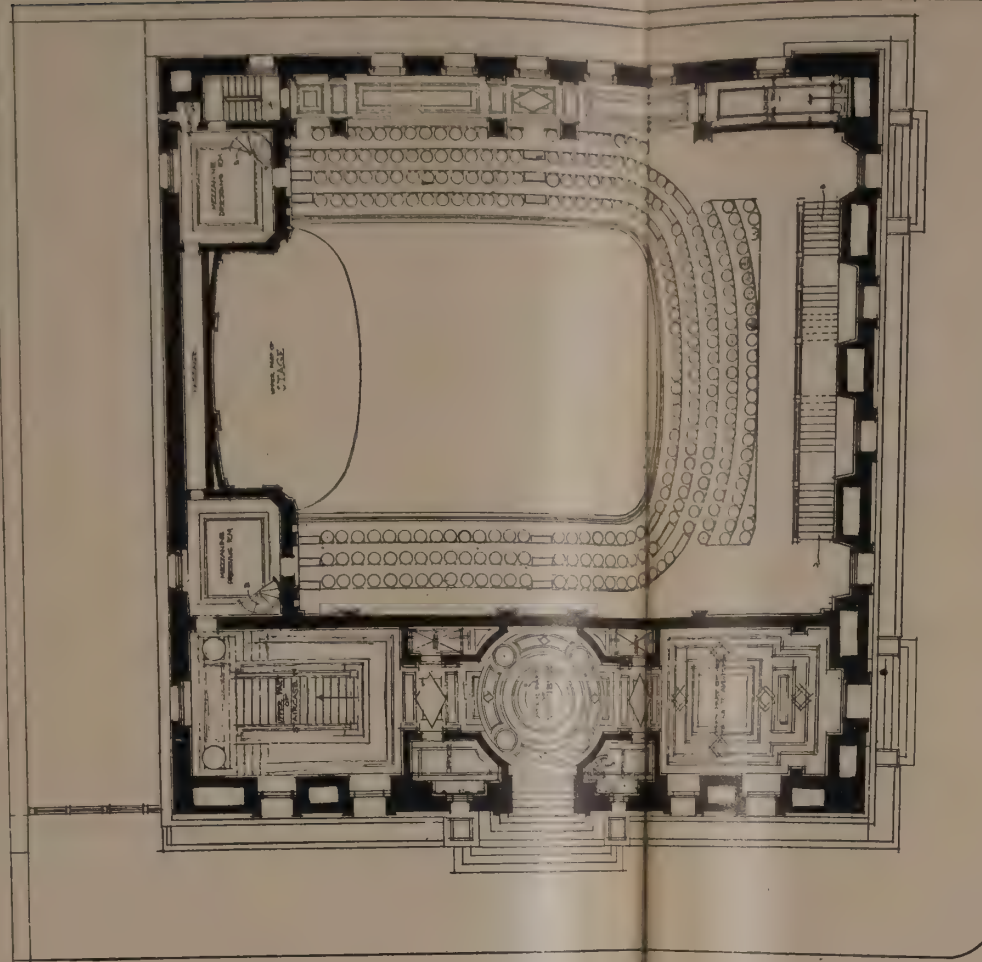
MEZZANINE TO SECOND FLOOR.



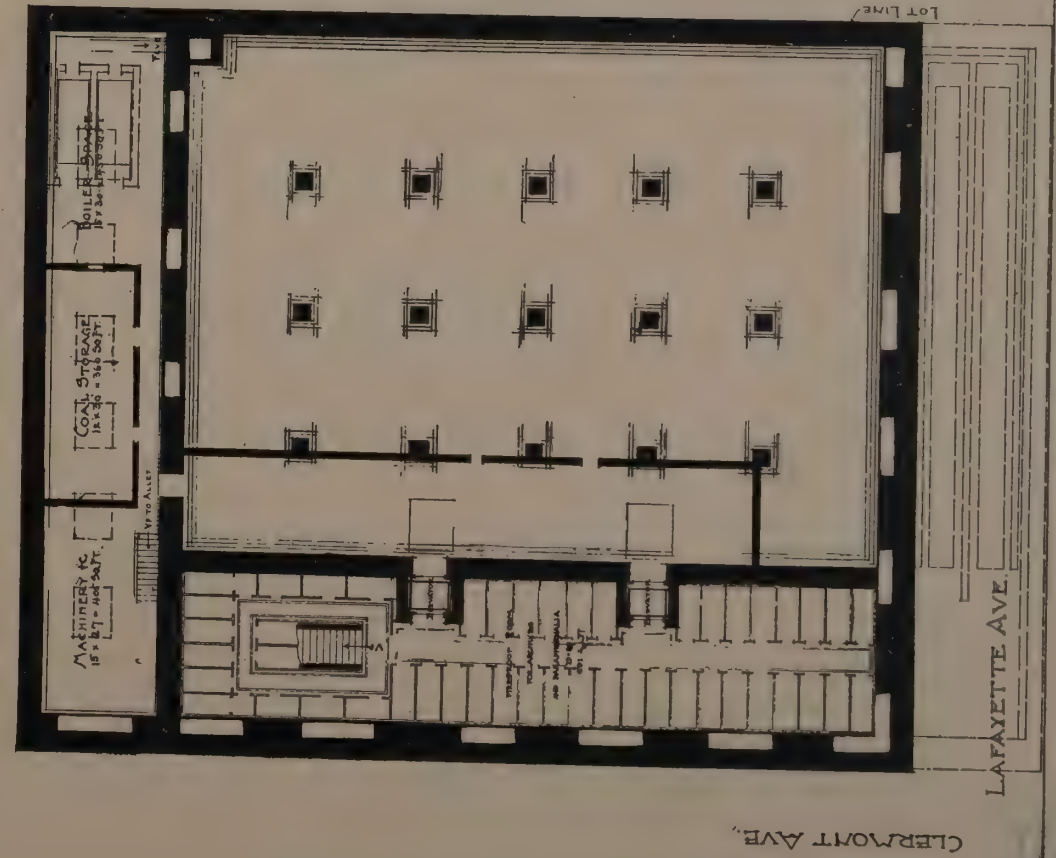
PLAN OF SECOND FLOOR.



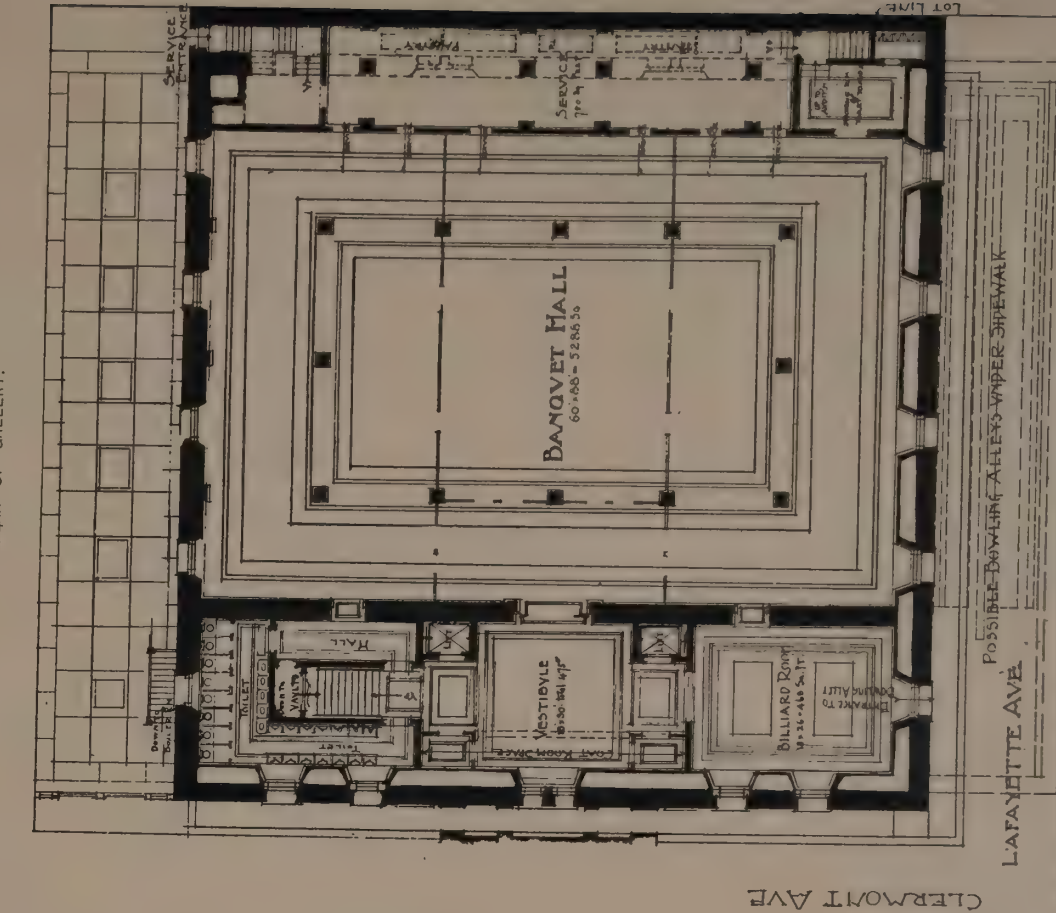
PLAN OF FIRST FLOOR.



PLAN OF GALLERY.

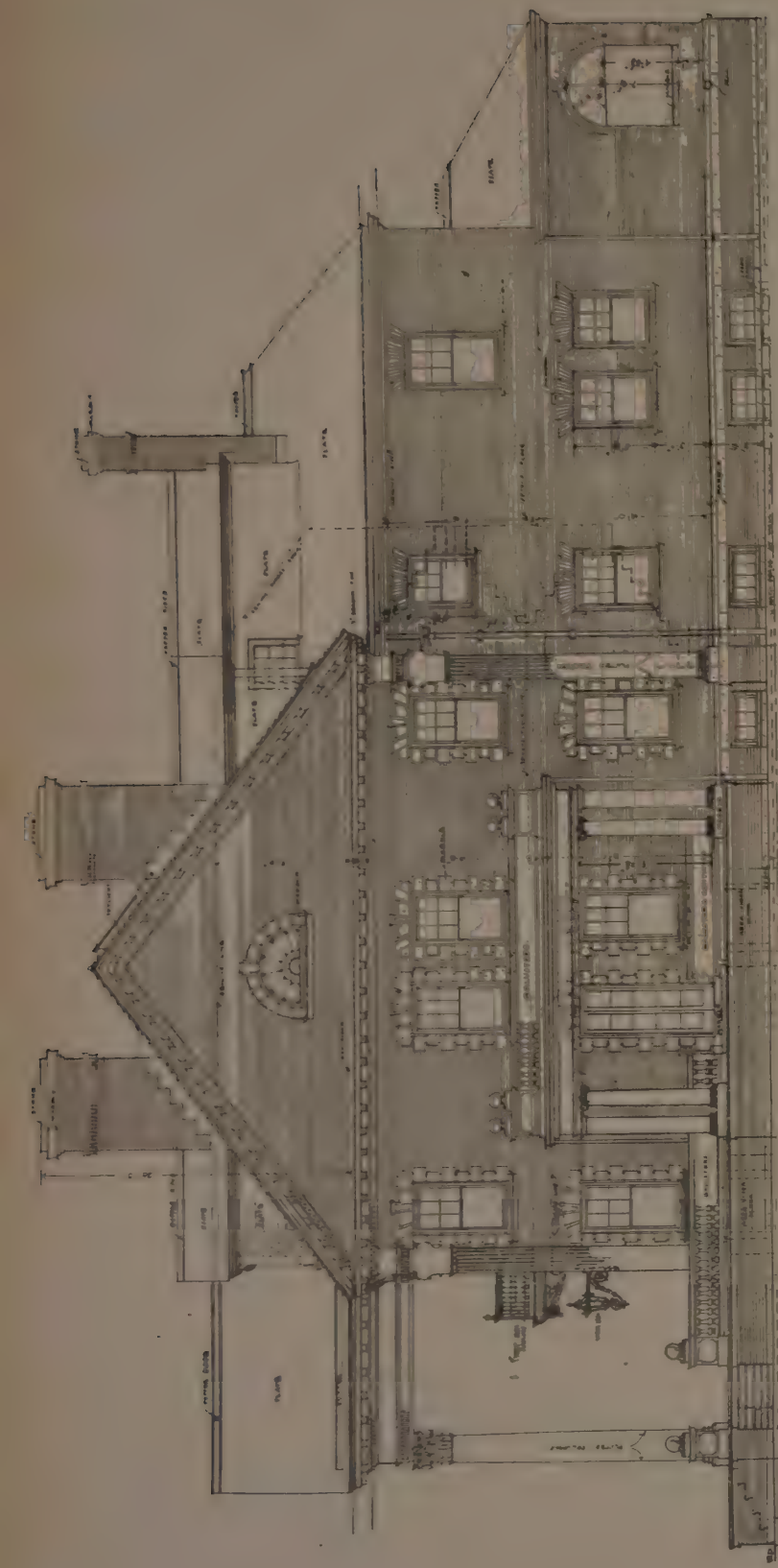


PLAN OF CELLAR FLOOR.

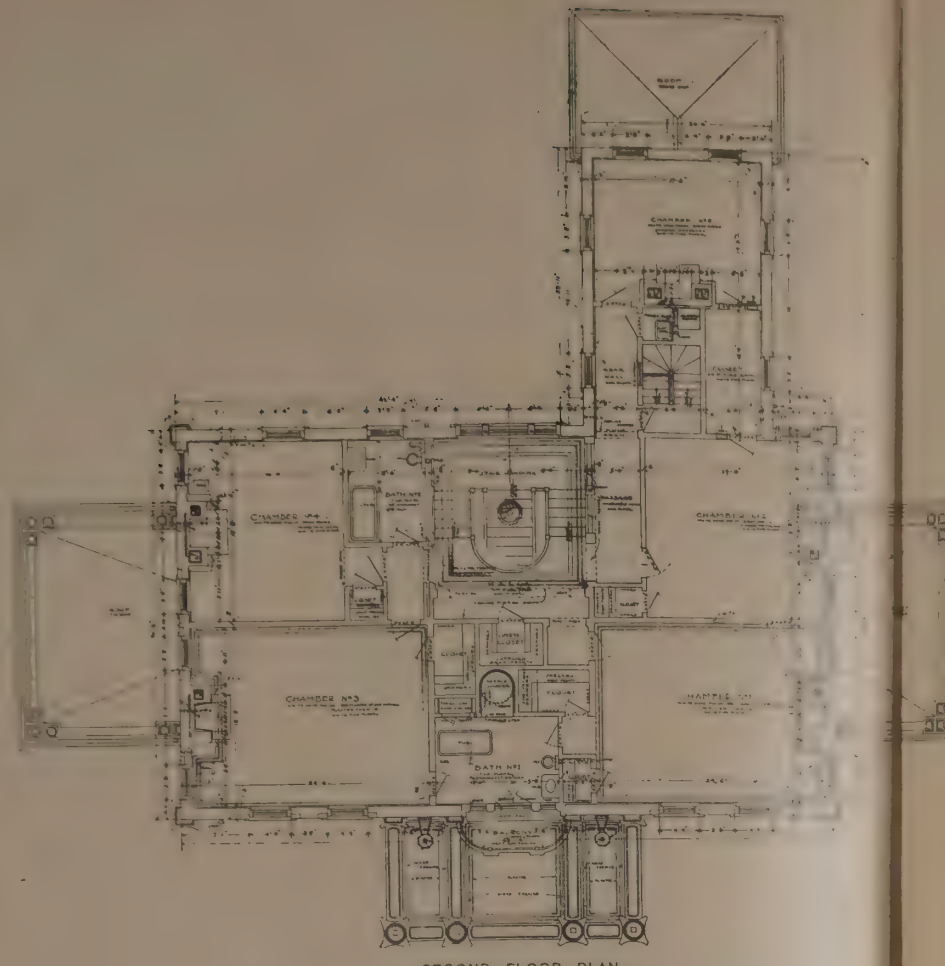


PLAN OF BASEMENT FLOOR.

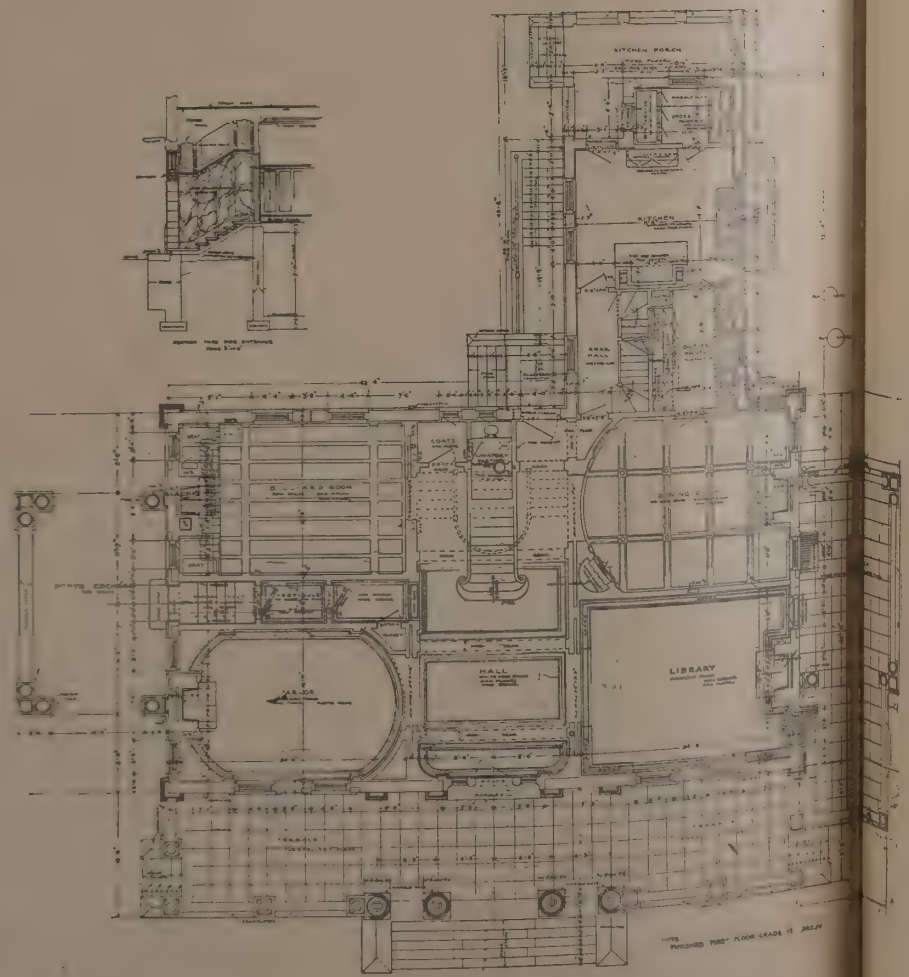
PLANS, SUCCESSFUL COMPETITIVE DESIGN FOR MASONIC TEMPLE, BROOKLYN, N. Y.
LORD & HEWLETT, ARCHITECTS.



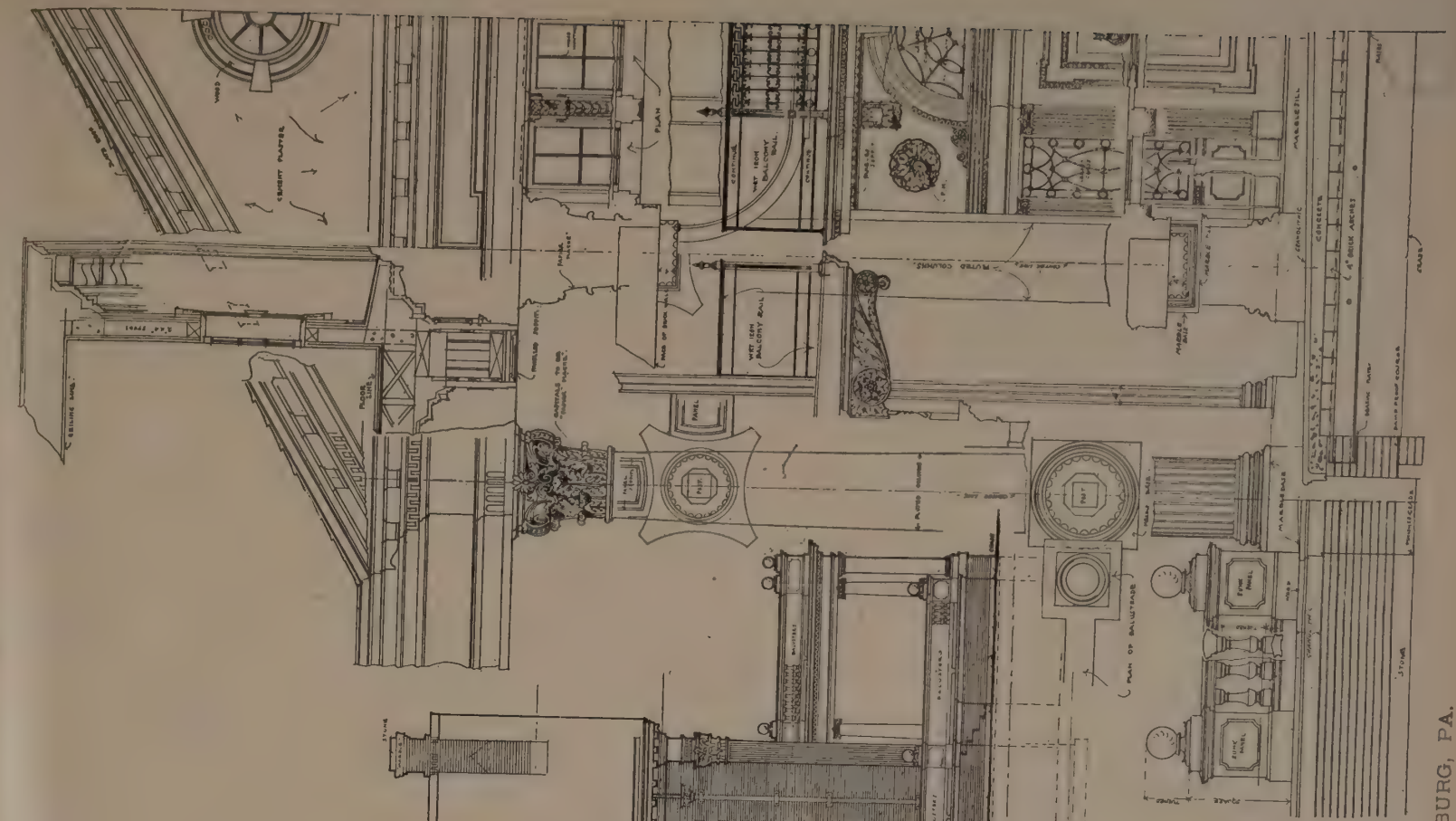
SOUTHEAST ELEVATION.



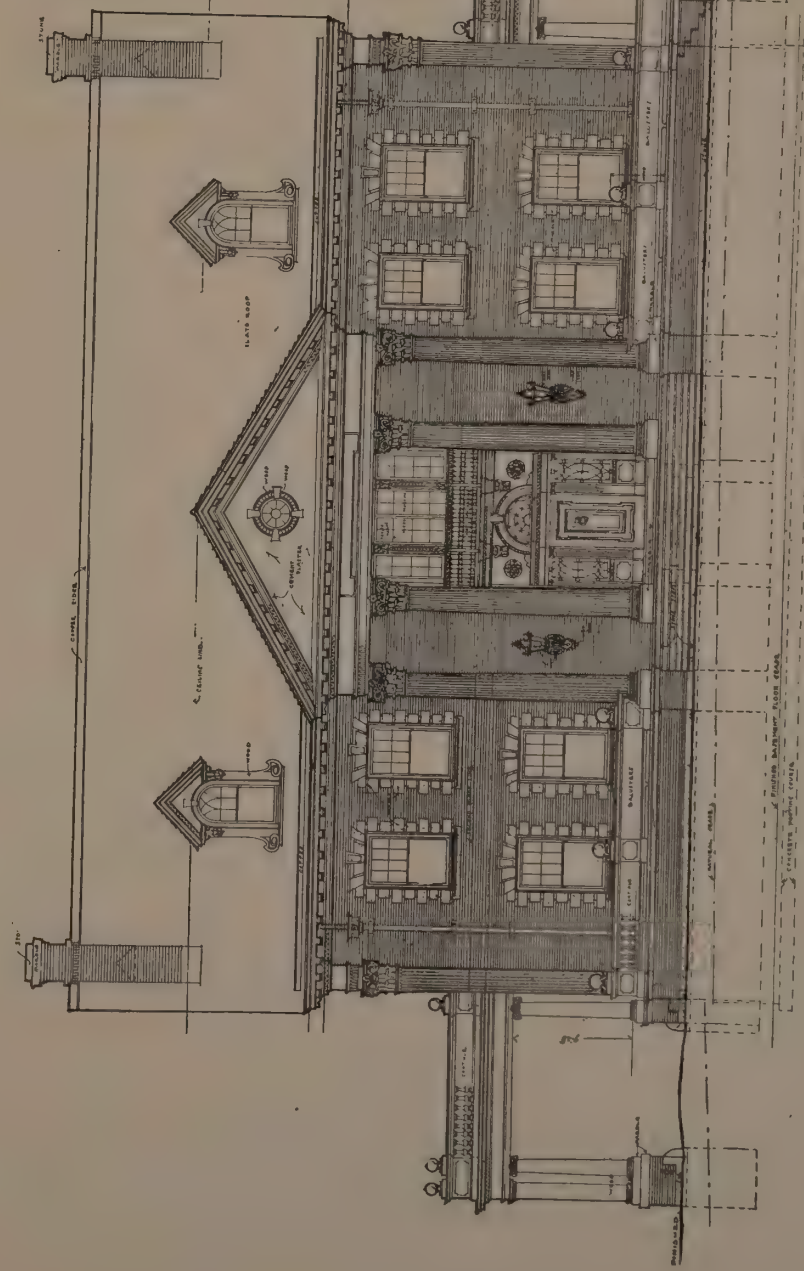
SECOND FLOOR PLAN.

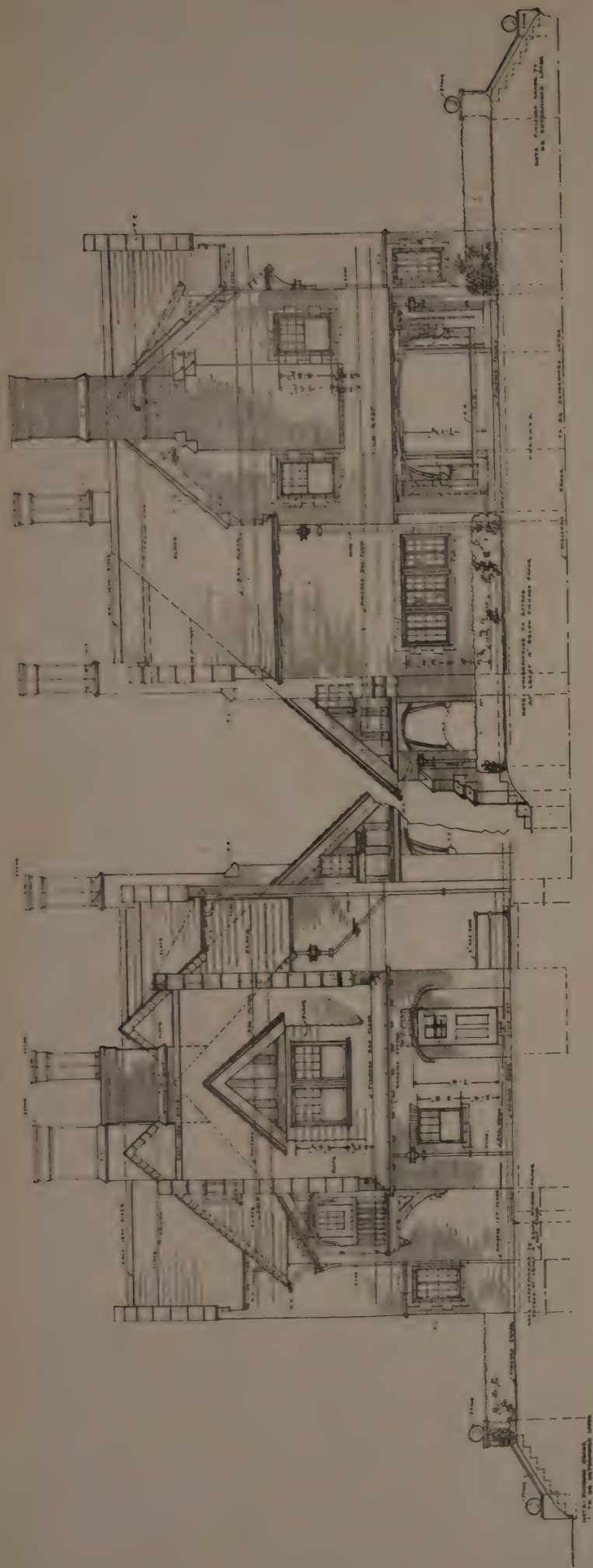


FIRST FLOOR PLAN.



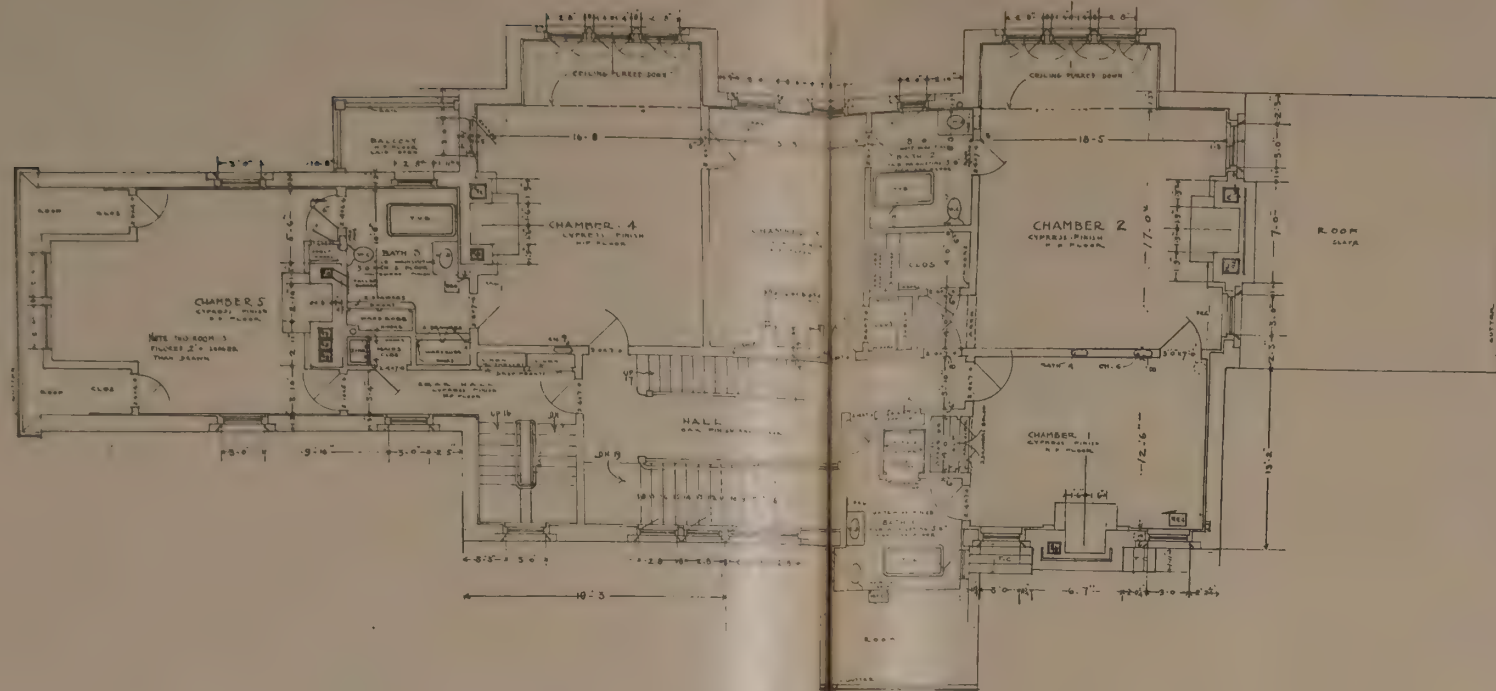
SOUTHWEST ELEVATION AND DETAIL.



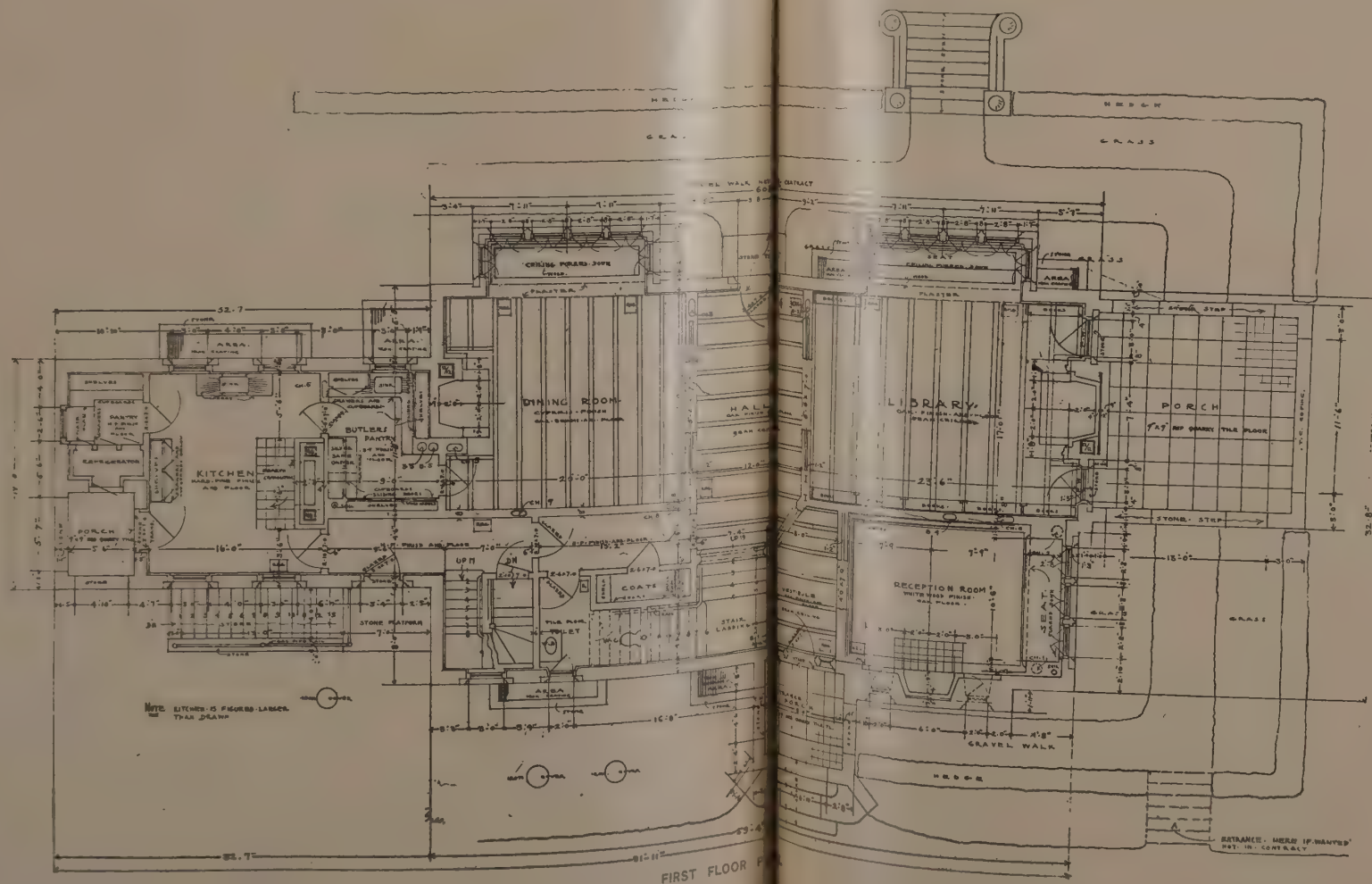


WEST ELEVATION.

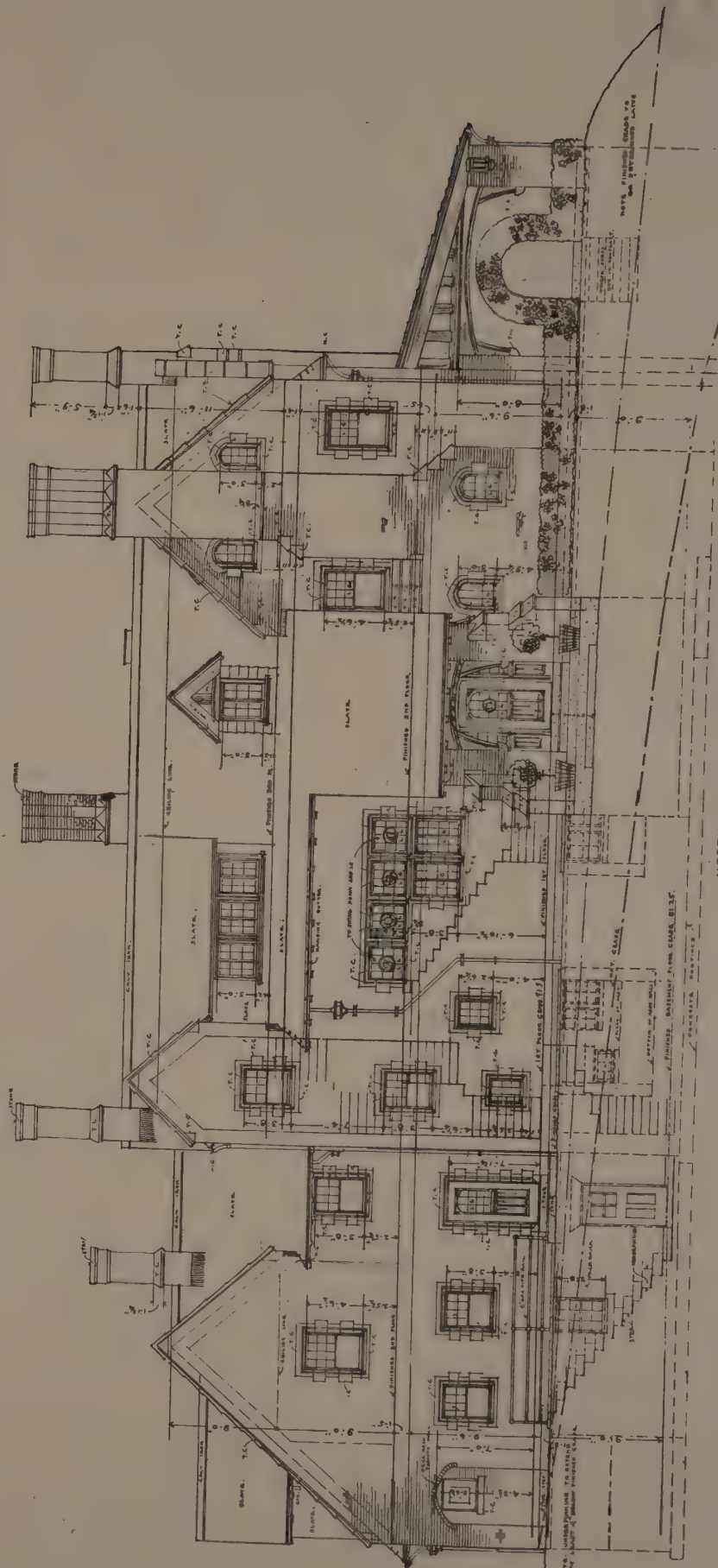
EAST ELEVATION.



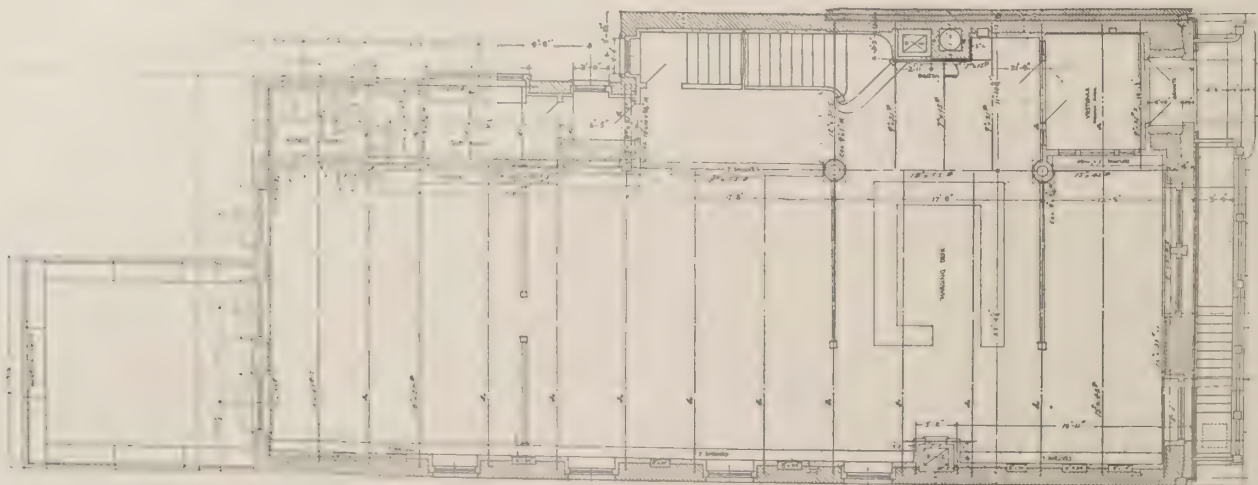
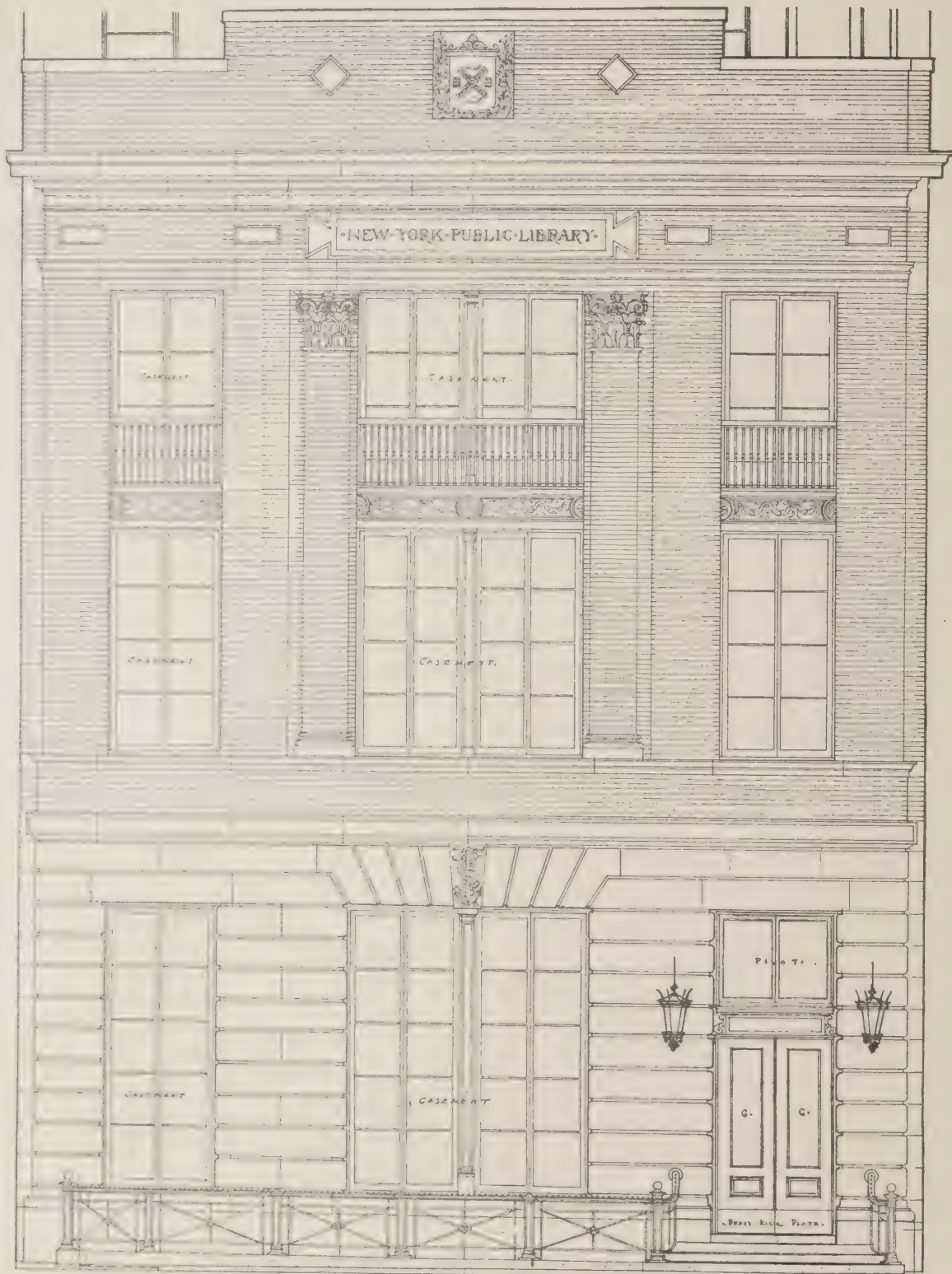
SECOND FLOOR PLAN.



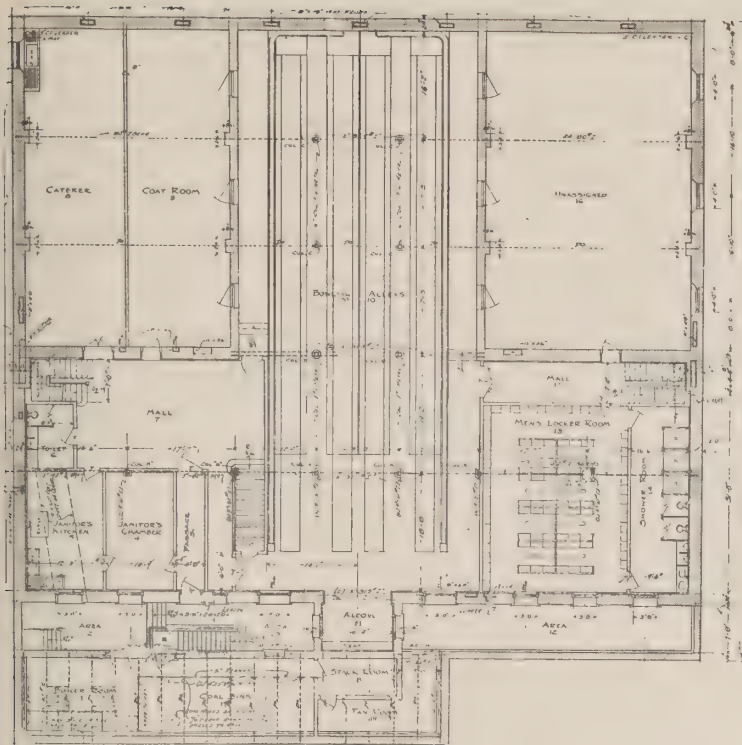
FIRST FLOOR PLAN.



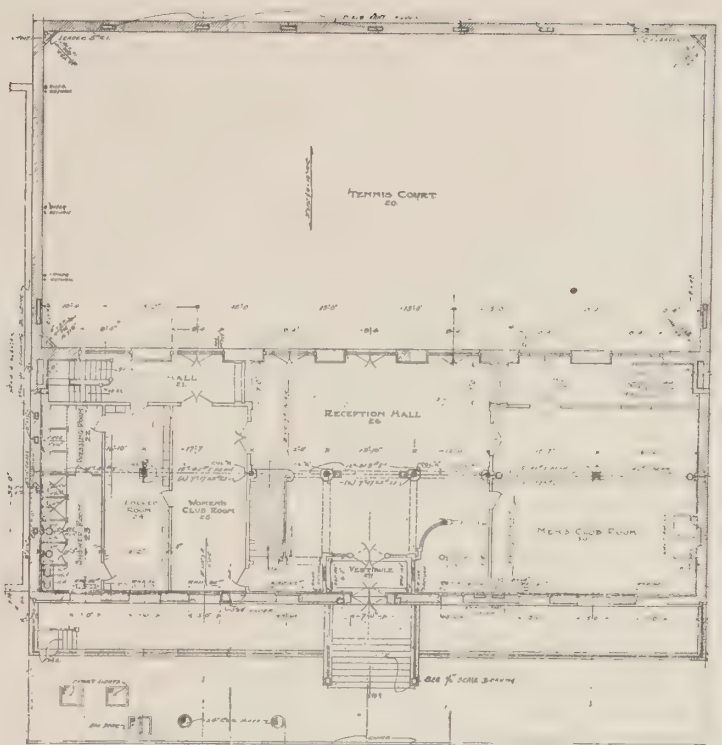
NORTH ELEVATION.
HOUSE FOR GEORGE M. LAUGHLIN, ESQ., PITTSBURG, PA.
MACCLURE & SPAHR, ARCHITECTS.



FRONT ELEVATION AND FIRST FLOOR PLAN.
CARNEGIE BRANCH LIBRARY, RIVINGTON STREET, NEW YORK CITY.
MCKIM, MEAD & WHITE, ARCHITECTS.

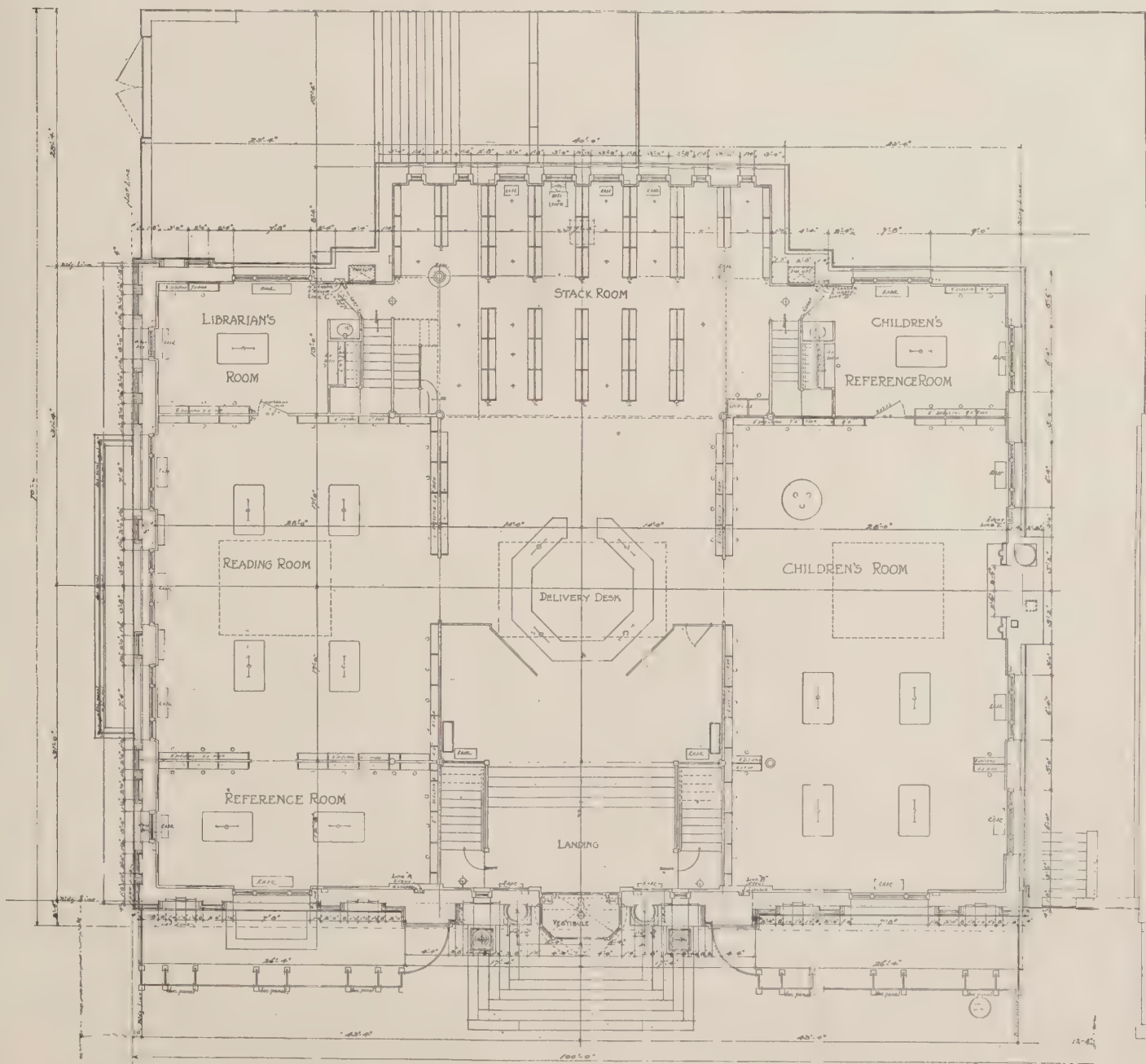


BASEMENT PLAN.



FIRST FLOOR PLAN.

PLANS, THE HEIGHTS CASINO, BROOKLYN, N. Y.
WILLIAM A. BORING, ARCHITECT.



FIRST FLOOR PLAN.

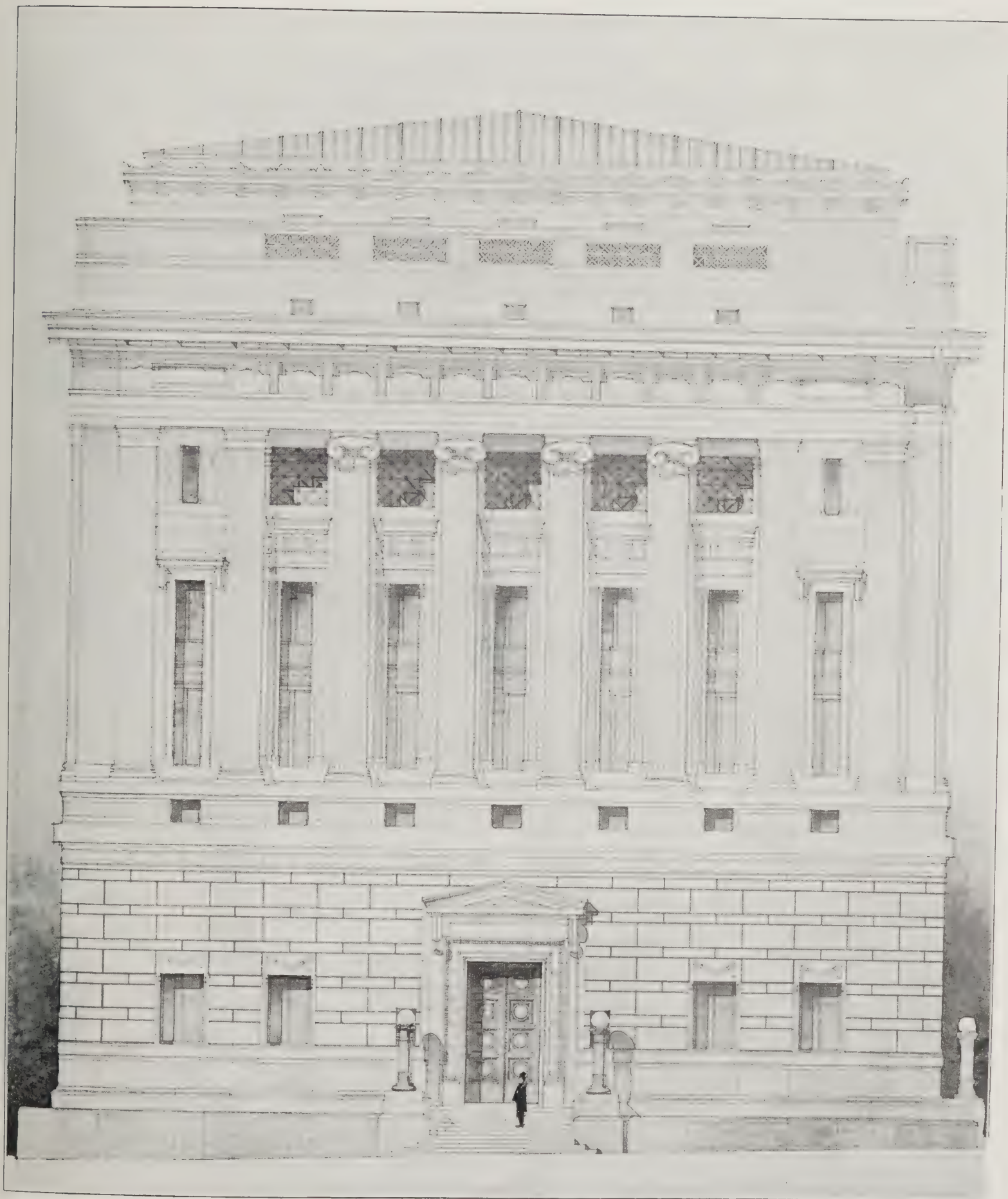
CARNEGIE BRANCH LIBRARY, CLINTON AND UNION STREETS, BROOKLYN, N. Y.
WILLIAM B. TUBBY & BROTHER, ARCHITECTS.



CARNEGIE BRANCH LIBRARY, RIVINGTON STREET, NEW YORK.
MCKIM, MEAD & WHITE, ARCHITECTS.



CARNEGIE BRANCH LIBRARY, CLINTON AND UNION STREETS, BROOKLYN, N. Y.
WILLIAM B. TUBBY & BROTHER, ARCHITECTS.



ELEVATION ON CLERMONT AVENUE.

SUCCESSFUL COMPETITIVE DESIGN FOR MASONIC TEMPLE, BROOKLYN, N. Y.

LORD & HEWLETT, ARCHITECTS.



HOUSE FOR D. P. BLACK, ESQ., PITTSBURG, PA.
MACCLURE & SPAHR, ARCHITECTS.

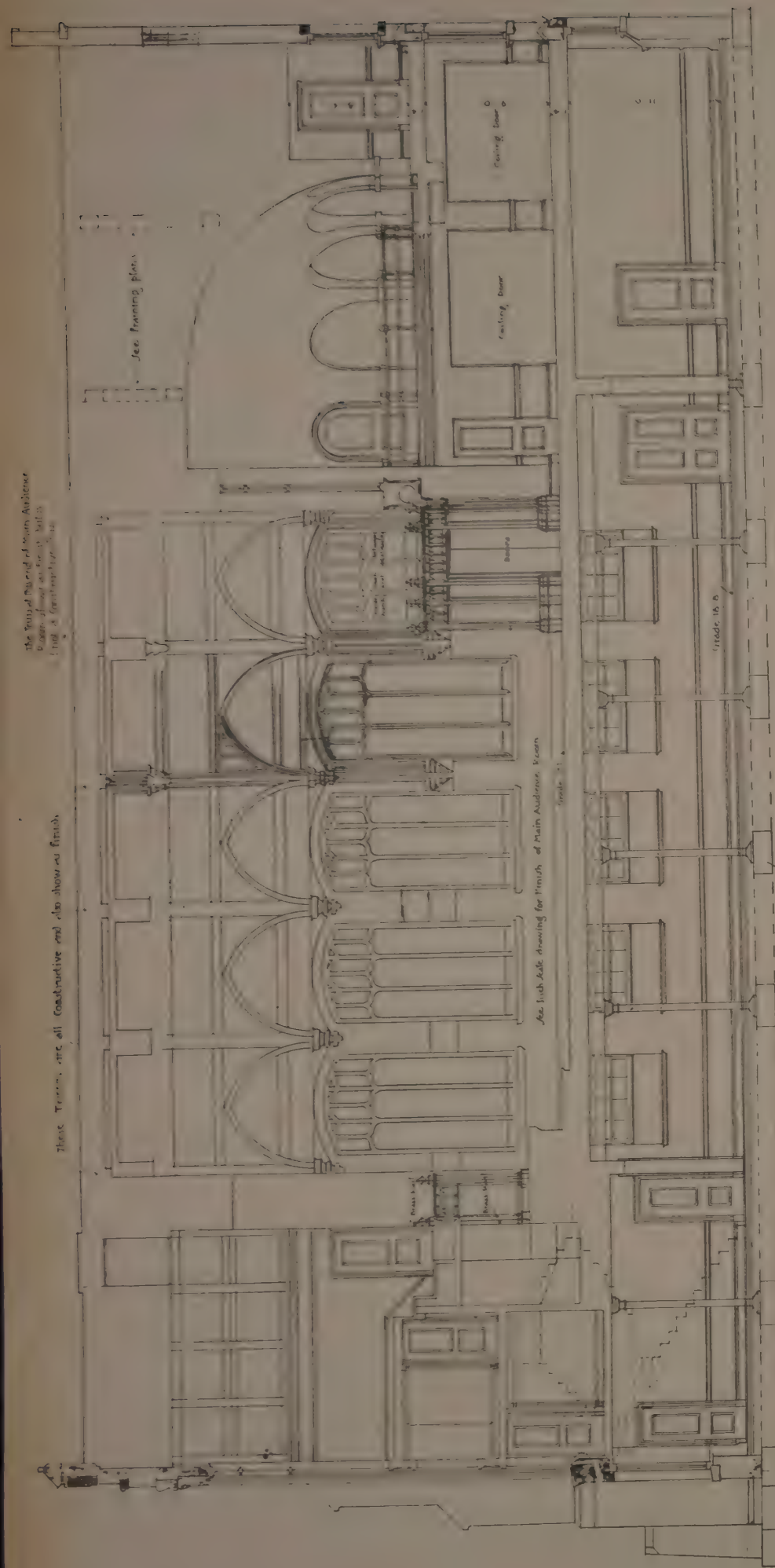


THE HEIGHTS CASINO, MONTAGUE STREET, BROOKLYN, N. Y.
WILLIAM A. BORING, ARCHITECT.

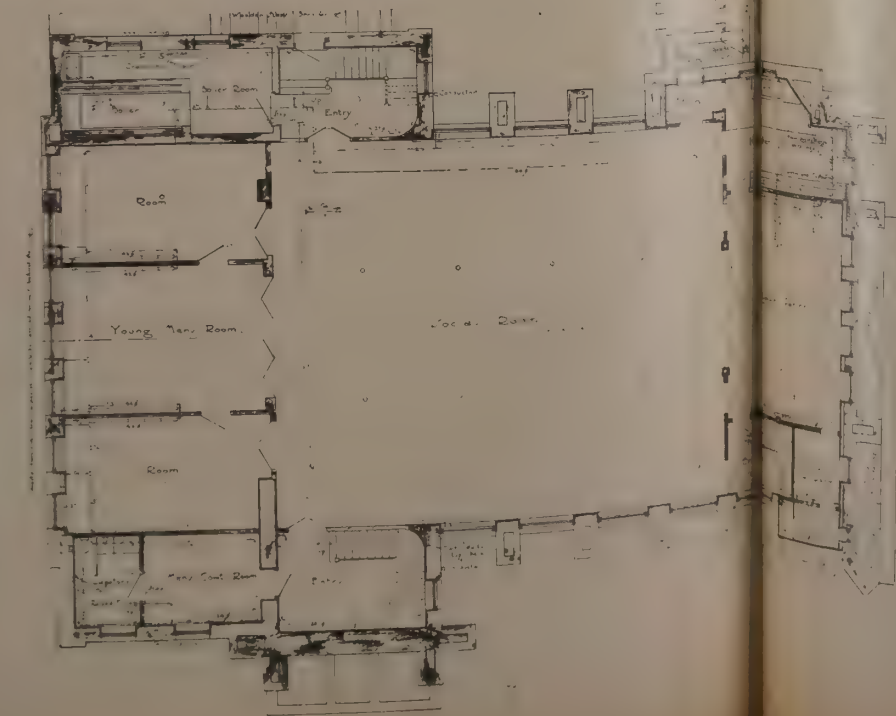


HOUSE FOR GEORGE M. LAUGHLIN, JR., ESQ., PITTSBURG, PA.
MACCLURE & SPAHR, ARCHITECTS.

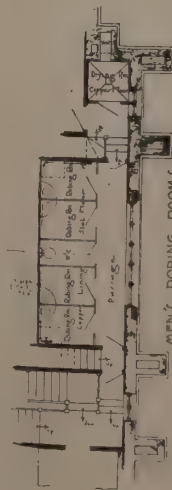




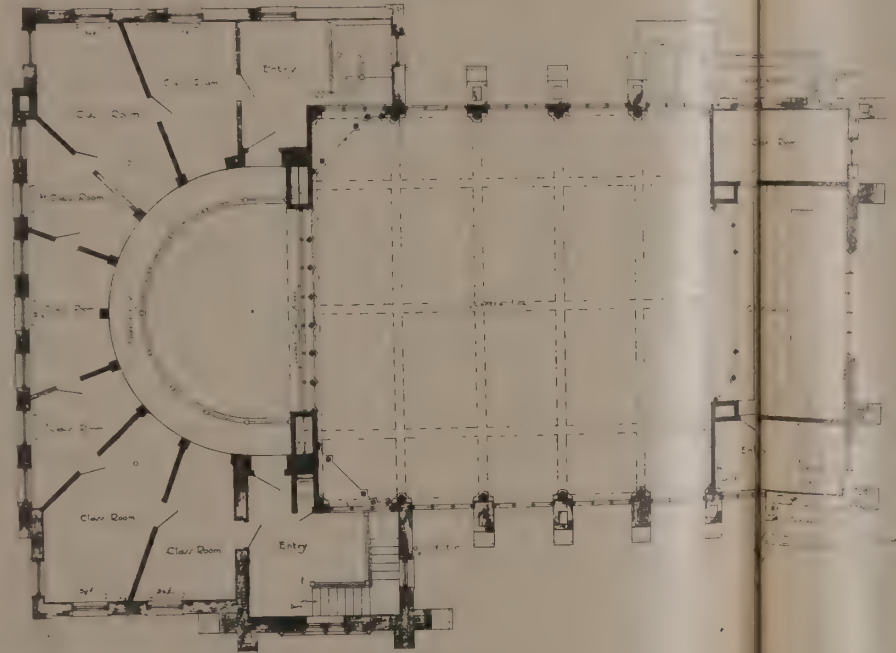
LONGITUDINAL SECTION, LOOKING WEST.



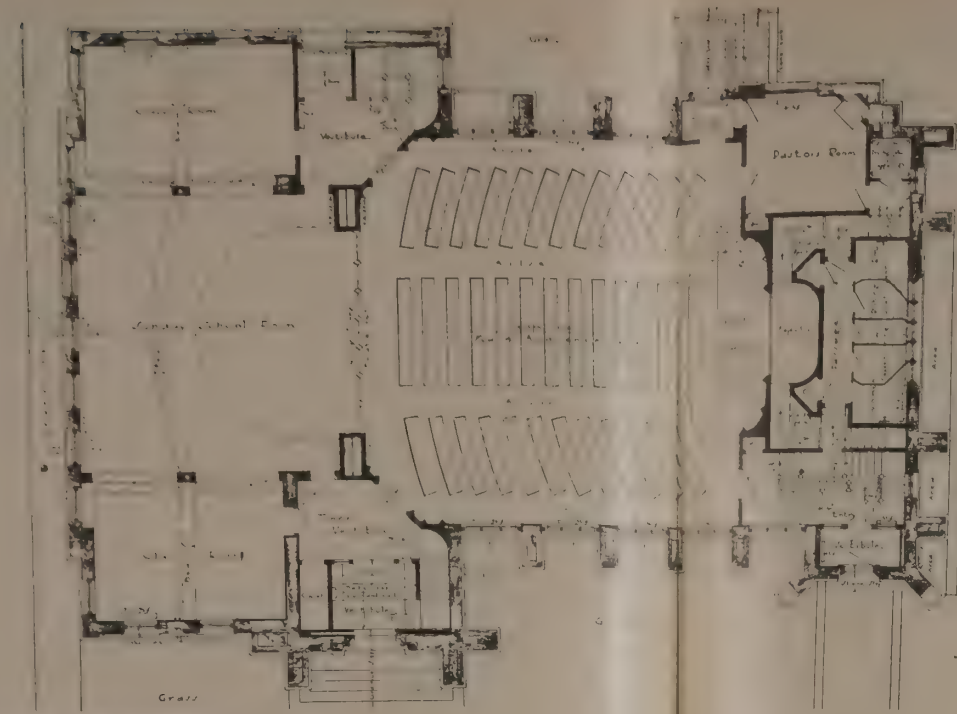
BASEMENT PLAN.



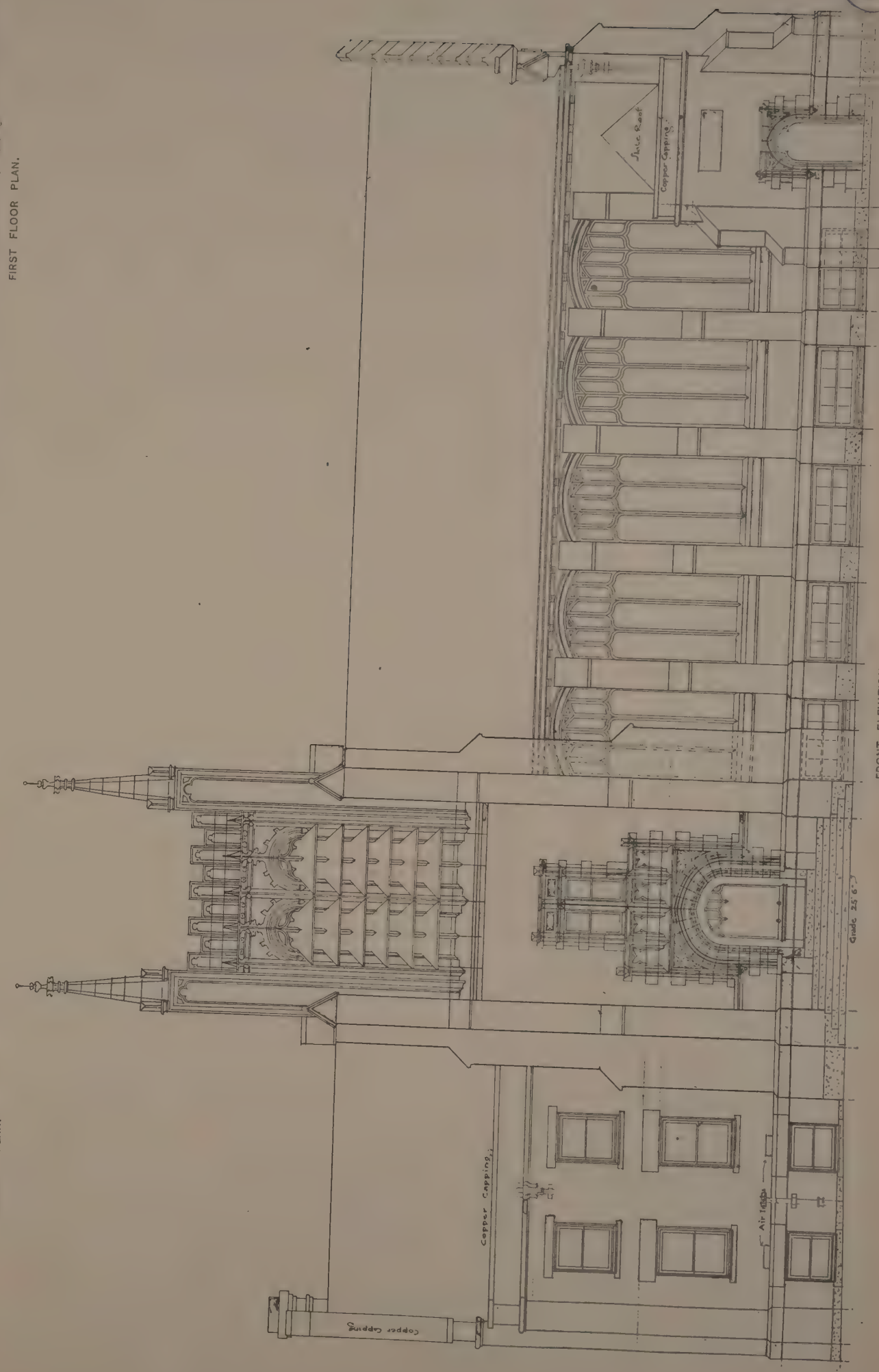
MEN'S ROBING ROOM.



SECOND FLOOR PLAN.

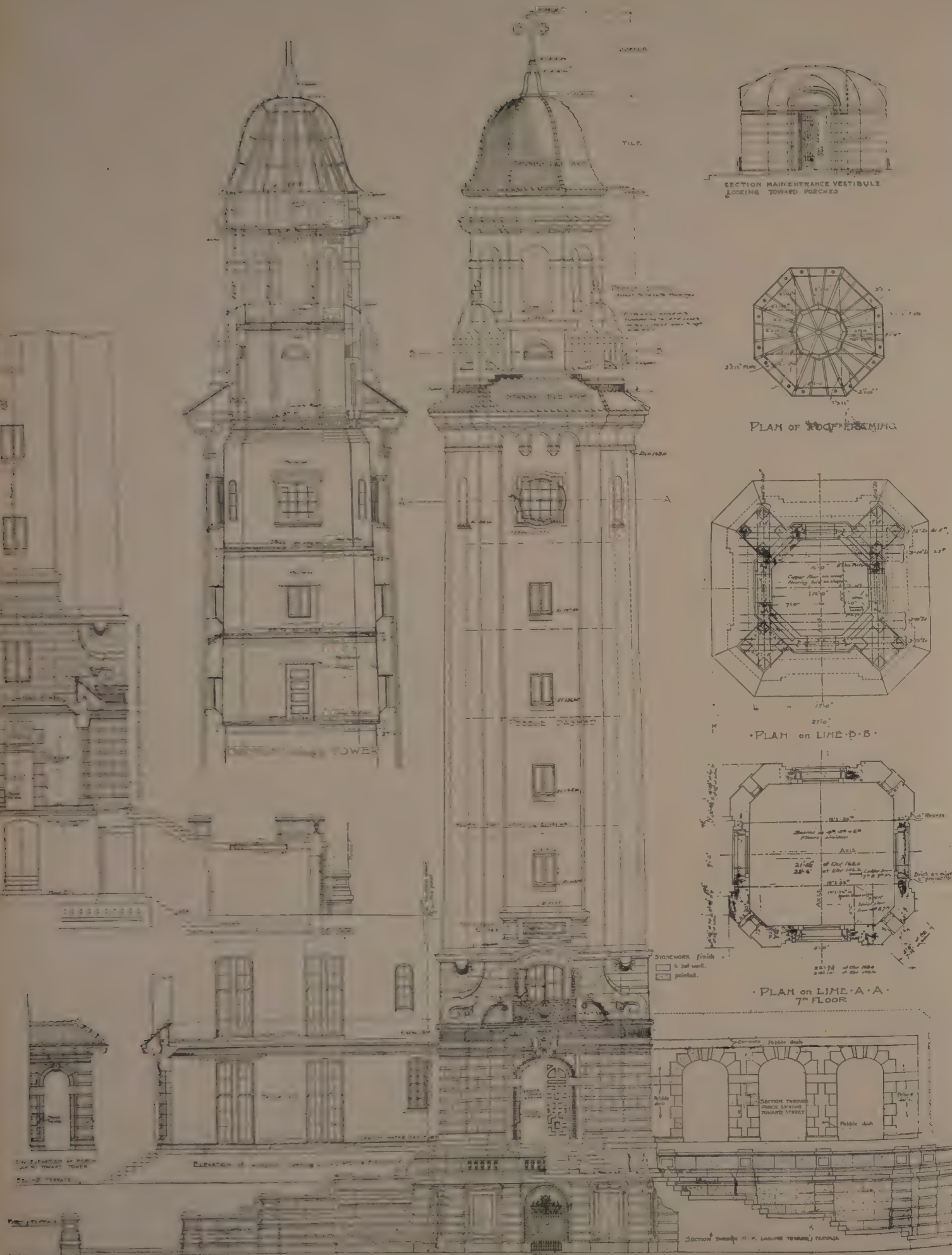


FIRST FLOOR PLAN.

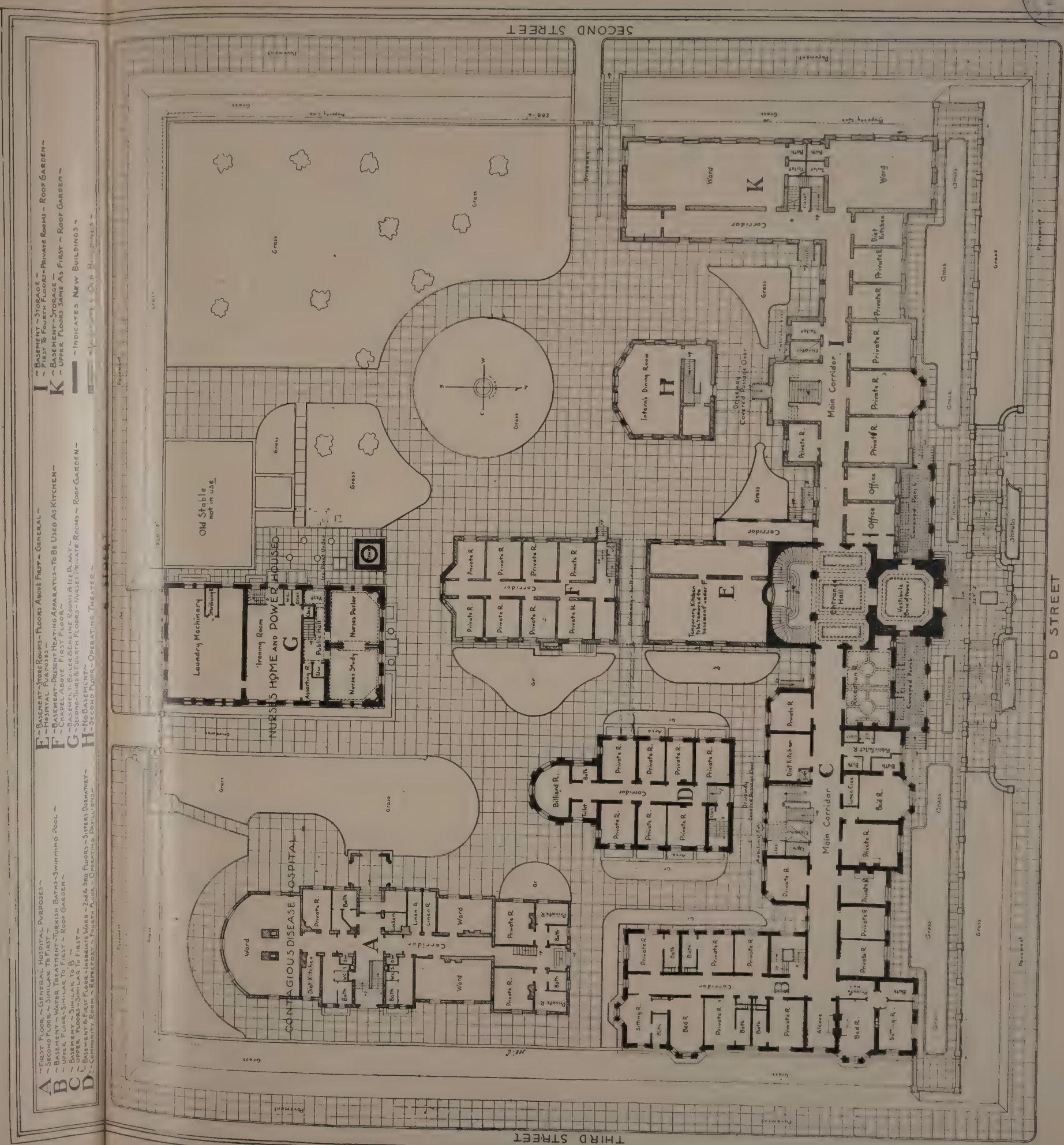


FRONT ELEVATION.
FIRST BAPTIST CHURCH, NEW HAVEN, CONN.
L. W. ROBINSON AND C. H. BLACKALL, ASSOCIATE ARCHITECTS.

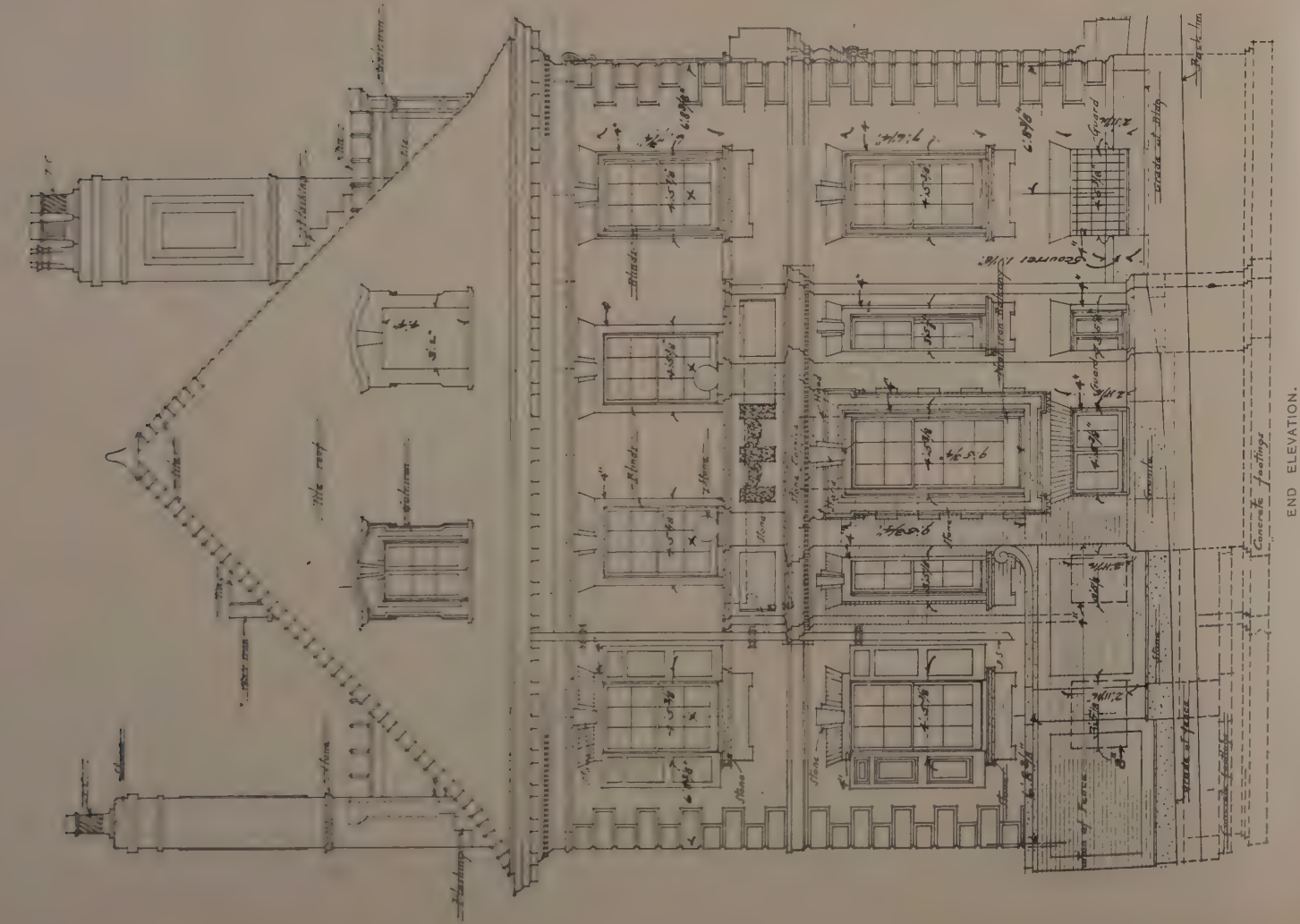
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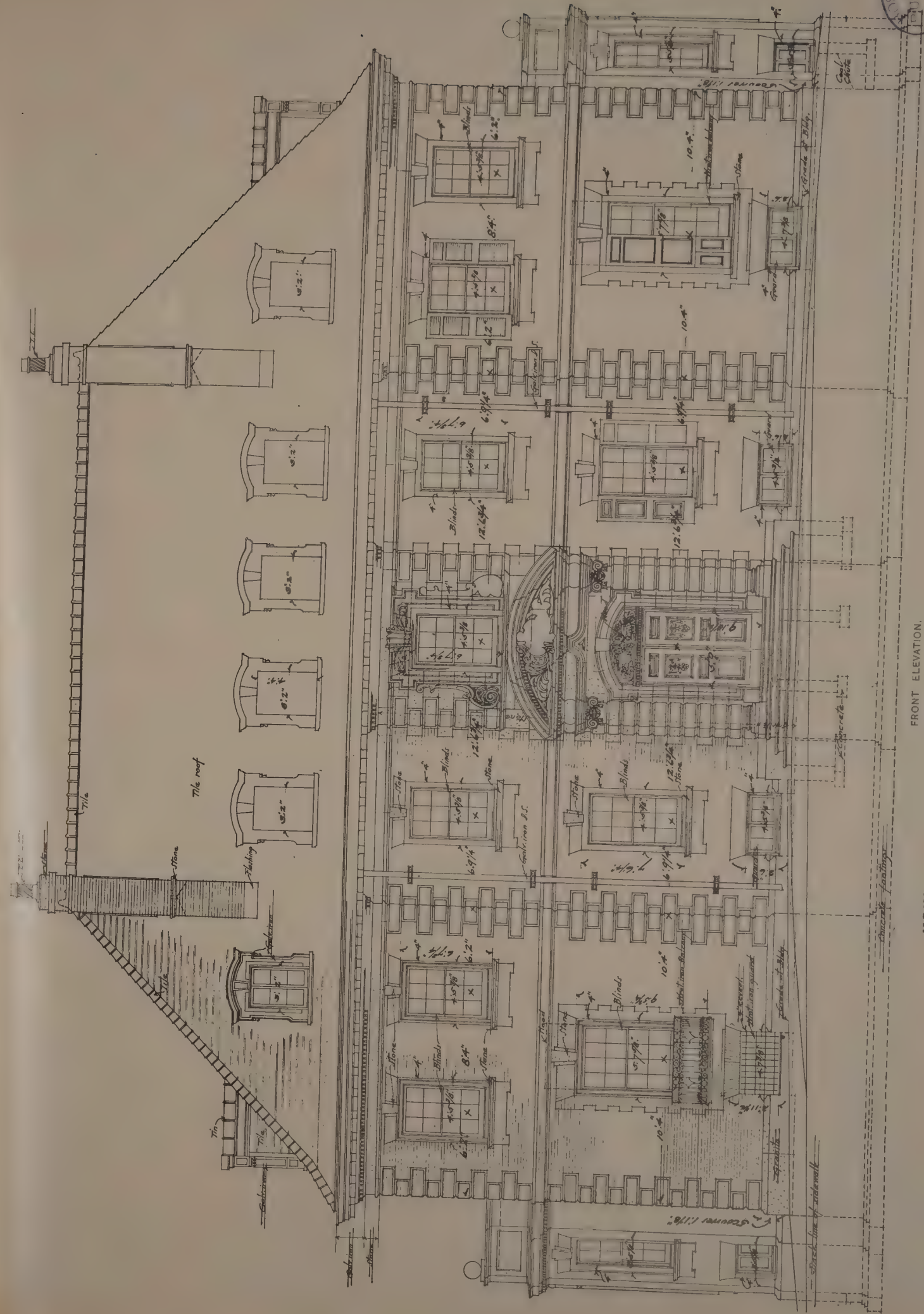
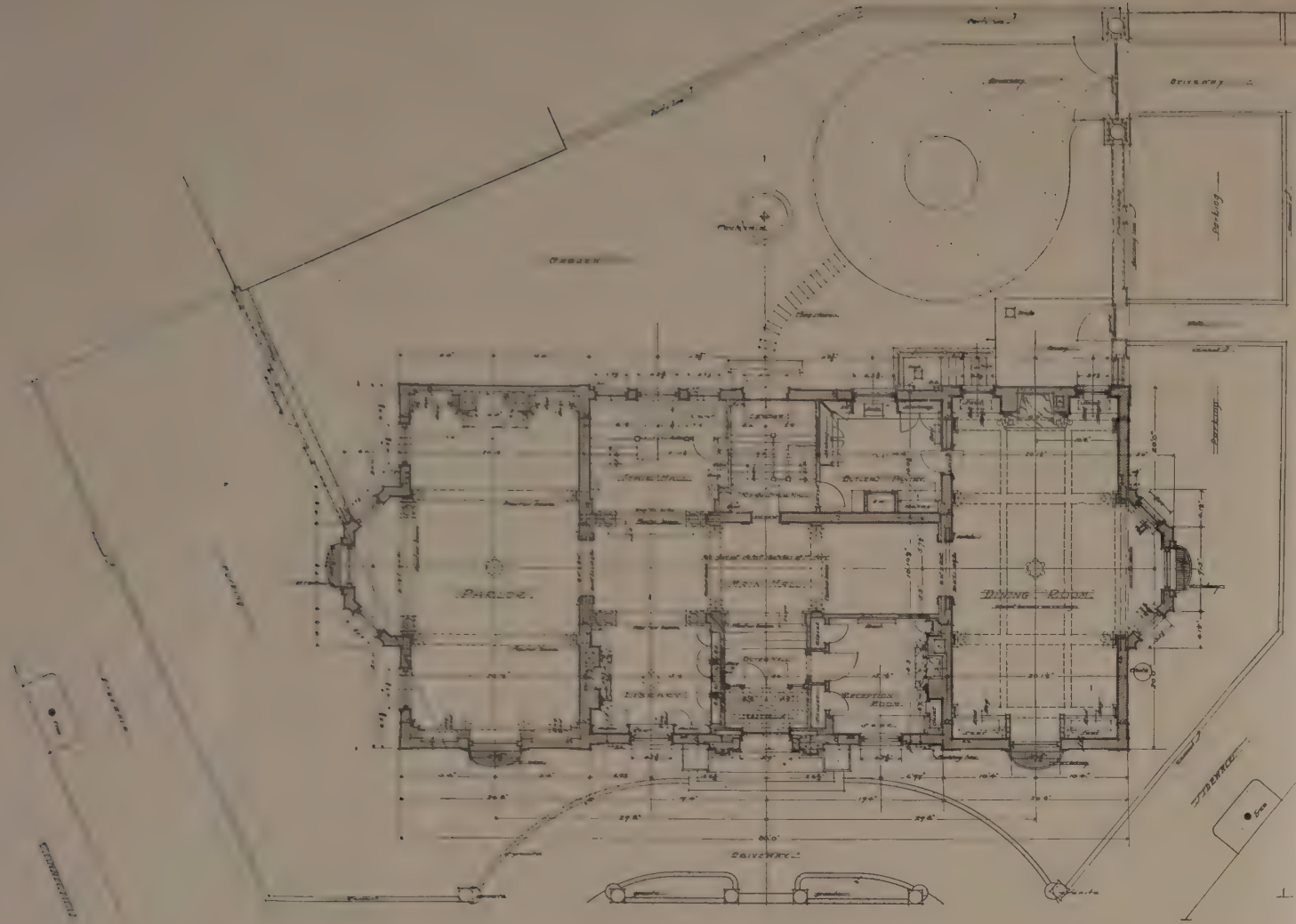
DETAIL OF TOWER.



- A - FIRST FLOOR - GENERAL HOSPITAL PURPOSES -
- B - BASEMENT - WATER TREATMENT - TURKISH BATHS - SWIMMING POOL -
- C - UPPER FLOOR - SIMILAR TO FIRST - ROOF GARDEN -
- D - BASEMENT - SIMILAR TO FIRST -
- E - BASEMENT - STORAGE -
- F - FIRST FLOOR - STORAGE -
- G - SECOND FLOOR - STORAGE -
- H - SECOND FLOOR - STORAGE -
- I - BASEMENT - STORAGE -
- J - FIRST FLOOR - STORAGE -
- K - SECOND FLOOR - STORAGE -
- L - BASEMENT - STORAGE -
- M - FIRST FLOOR - STORAGE -
- N - SECOND FLOOR - STORAGE -
- O - BASEMENT - STORAGE -
- P - FIRST FLOOR - STORAGE -
- Q - SECOND FLOOR - STORAGE -
- R - BASEMENT - STORAGE -
- S - FIRST FLOOR - STORAGE -
- T - SECOND FLOOR - STORAGE -
- U - BASEMENT - STORAGE -
- V - FIRST FLOOR - STORAGE -
- W - SECOND FLOOR - STORAGE -
- X - BASEMENT - STORAGE -
- Y - FIRST FLOOR - STORAGE -
- Z - SECOND FLOOR - STORAGE -

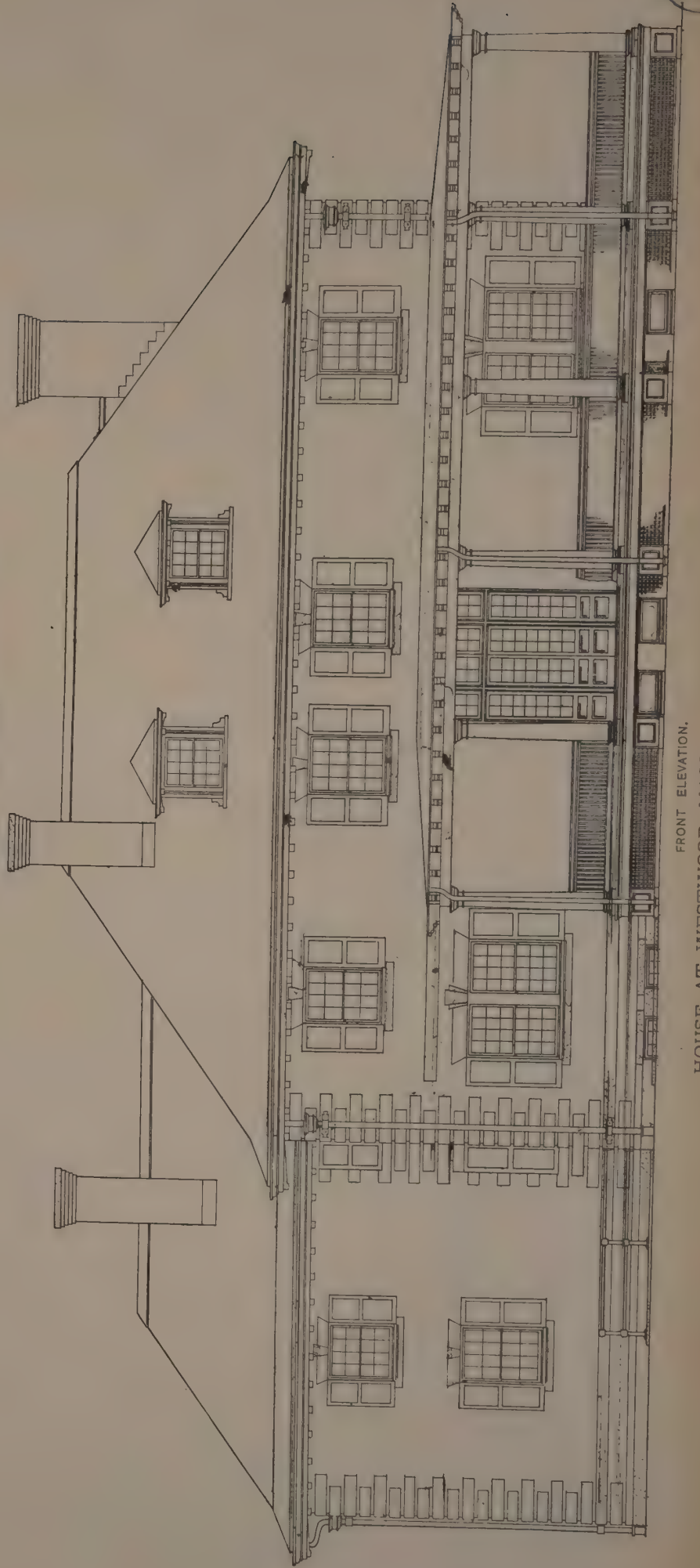
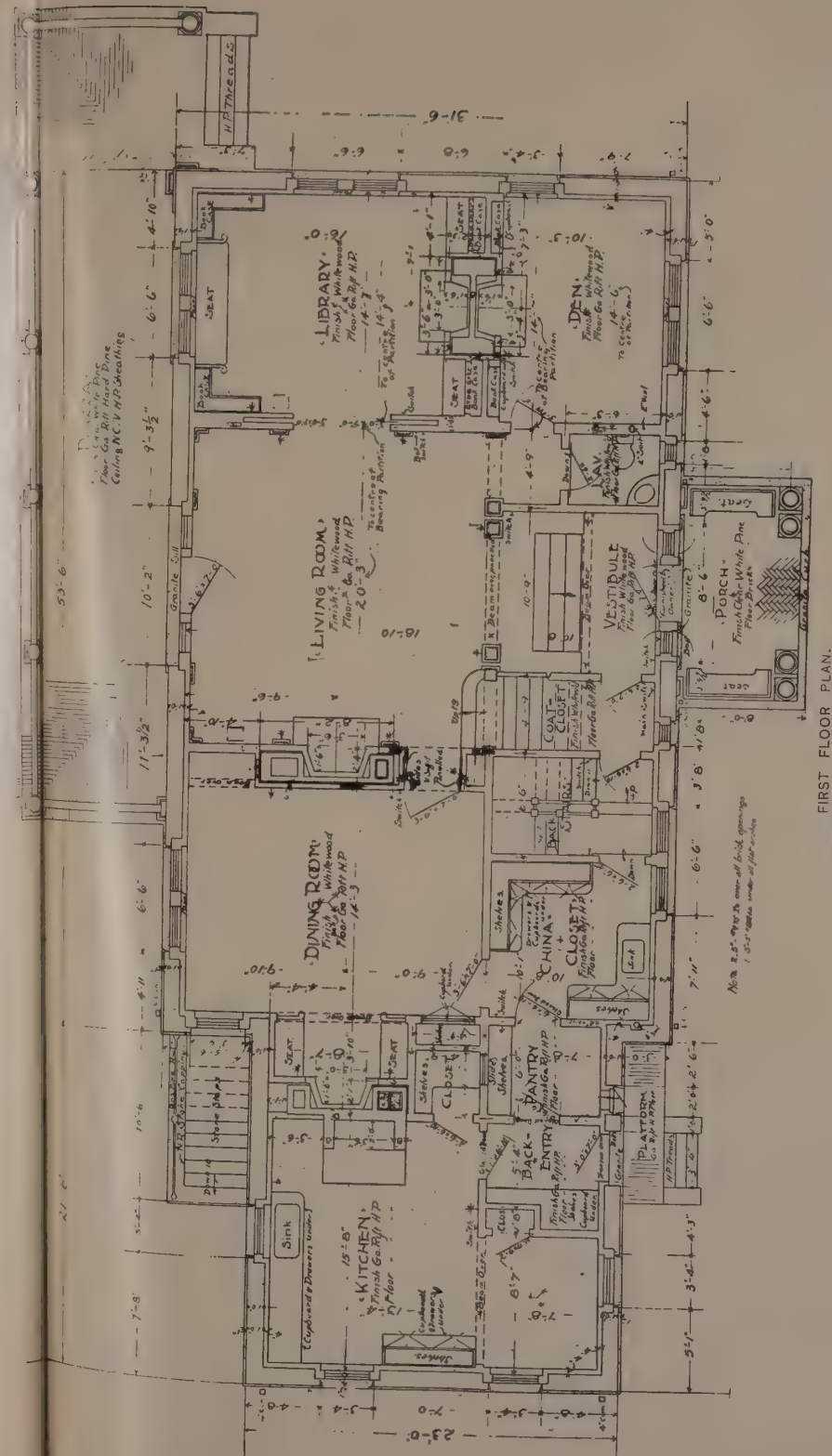
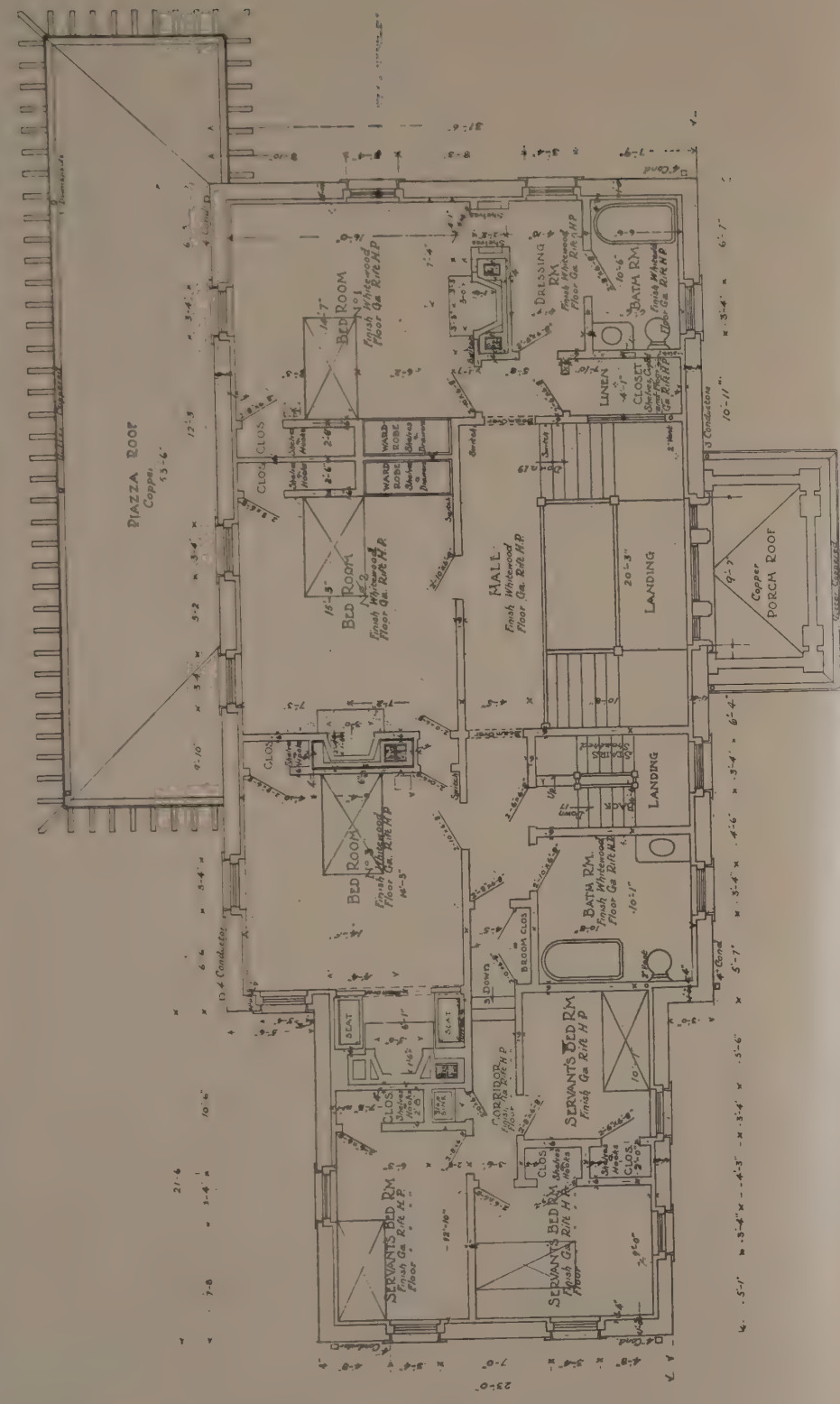


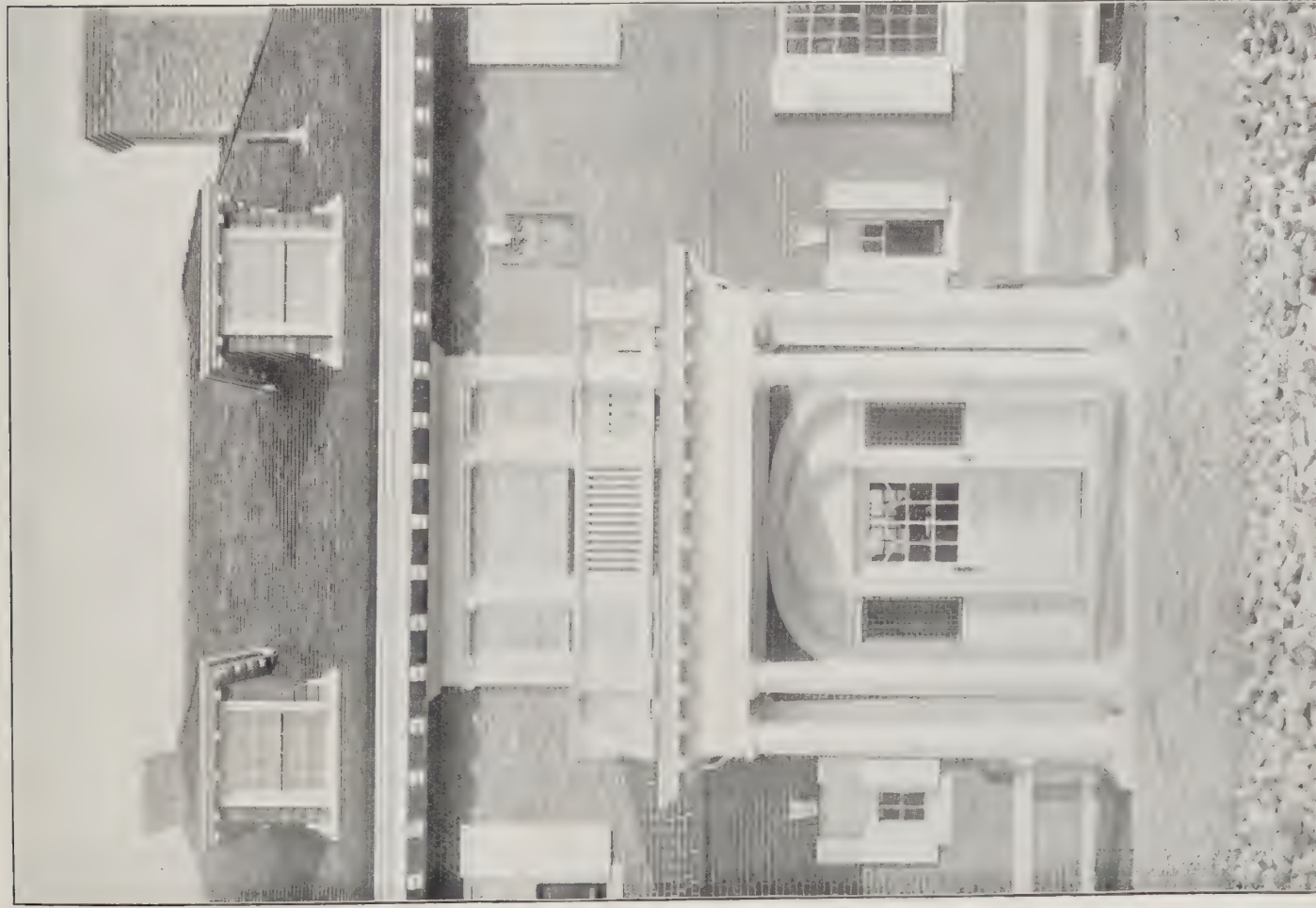
END ELEVATION.



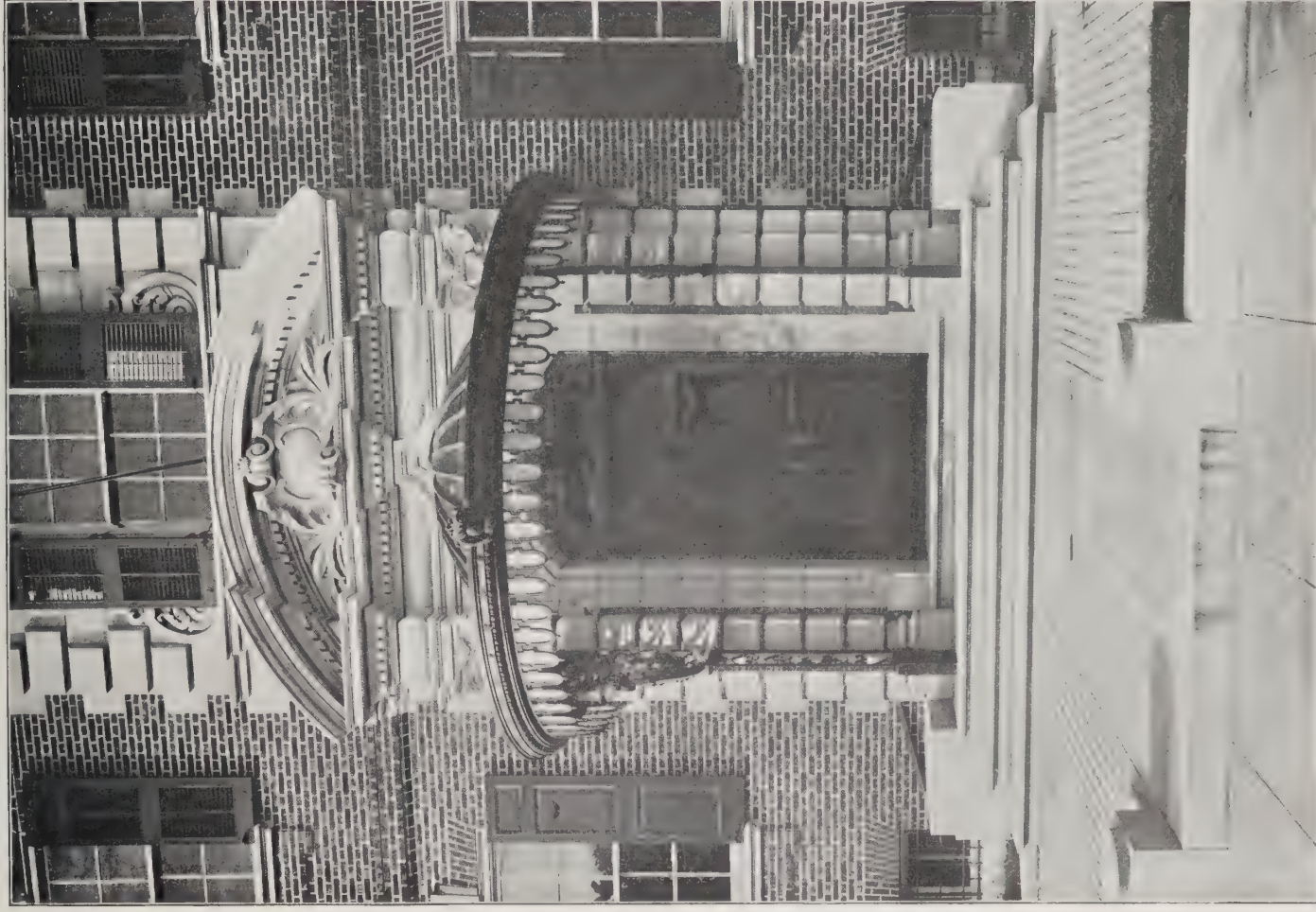
HOUSE AT WASHINGTON, D. C. MARSH & PETER, ARCHITECTS.

FRONT ELEVATION.





ENTRANCE, HOUSE AT WESTWOOD, MASS.
JAMES PURDON, ARCHITECT.



ENTRANCE HOUSE AT WASHINGTON, D. C.
MARSH & PETER ARCHITECTS.



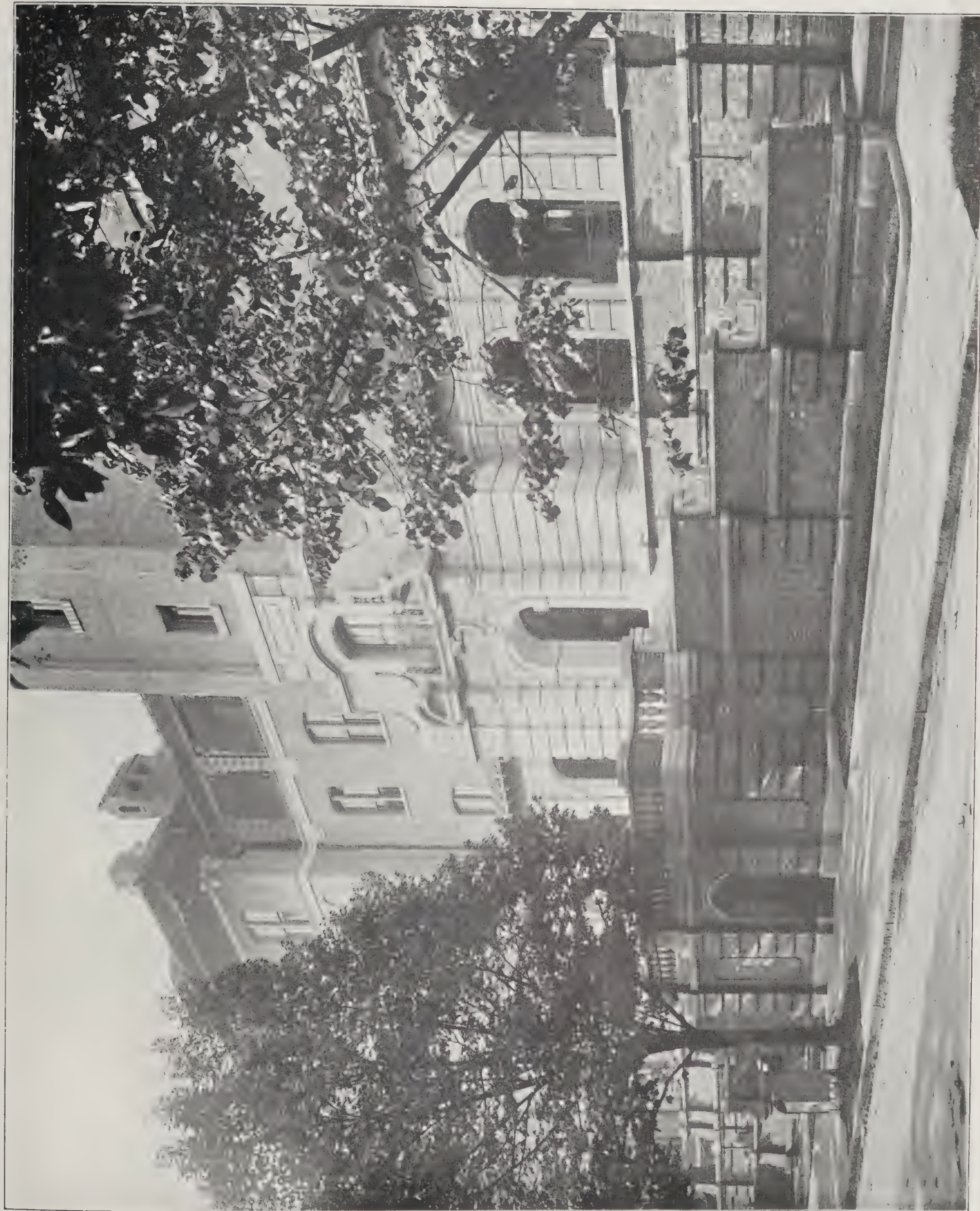


HOUSE AT WESTWOOD, MASS.
JAMES PURDON, ARCHITECT.





HOUSE AT WASHINGTON, D. C.
MARSH & PETER, ARCHITECTS.

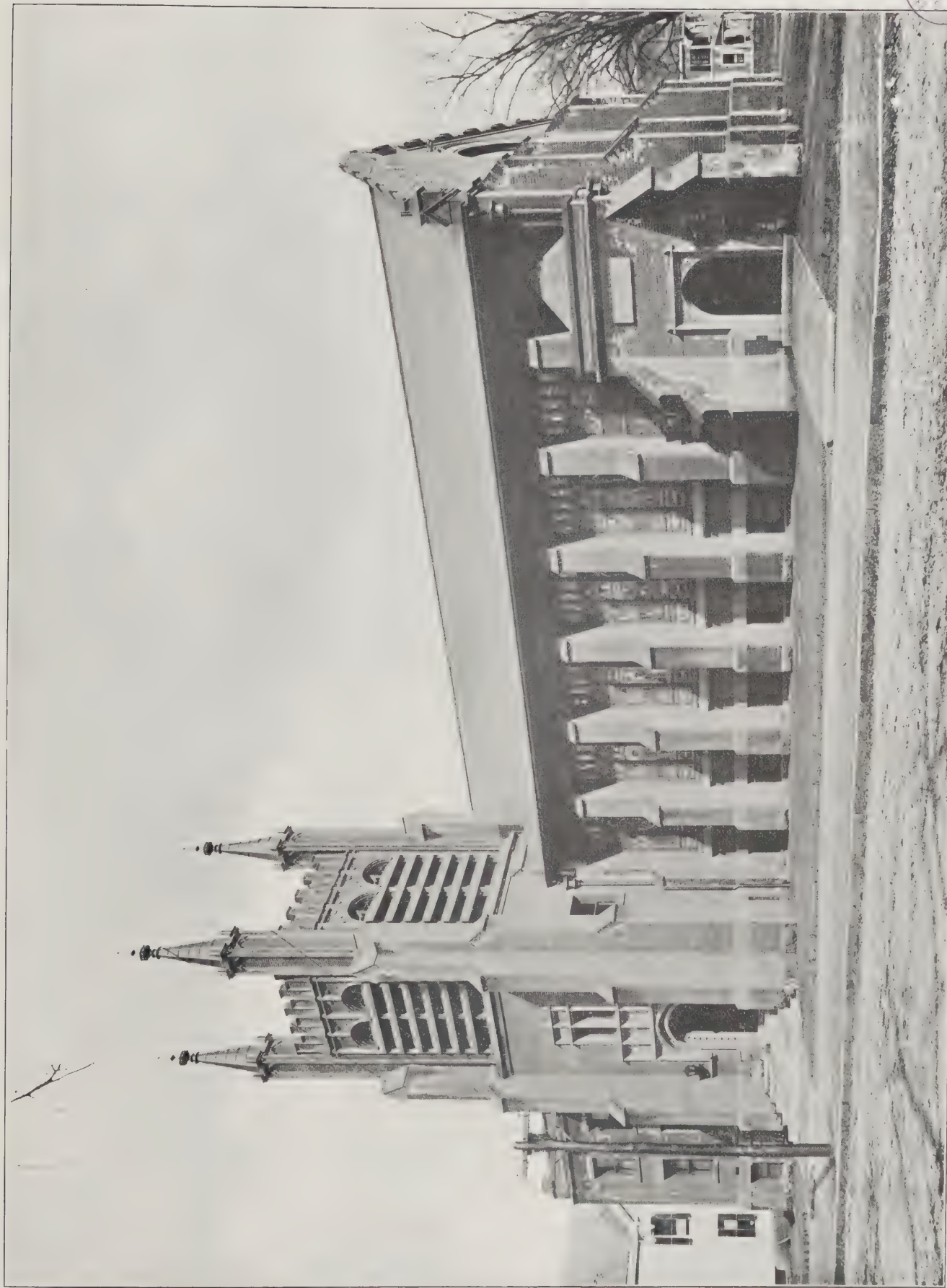


DETAILS OF FRONT, PROVIDENCE HOSPITAL, WASHINGTON, D. C.
WOOD, DONN & DEMING, ARCHITECTS.

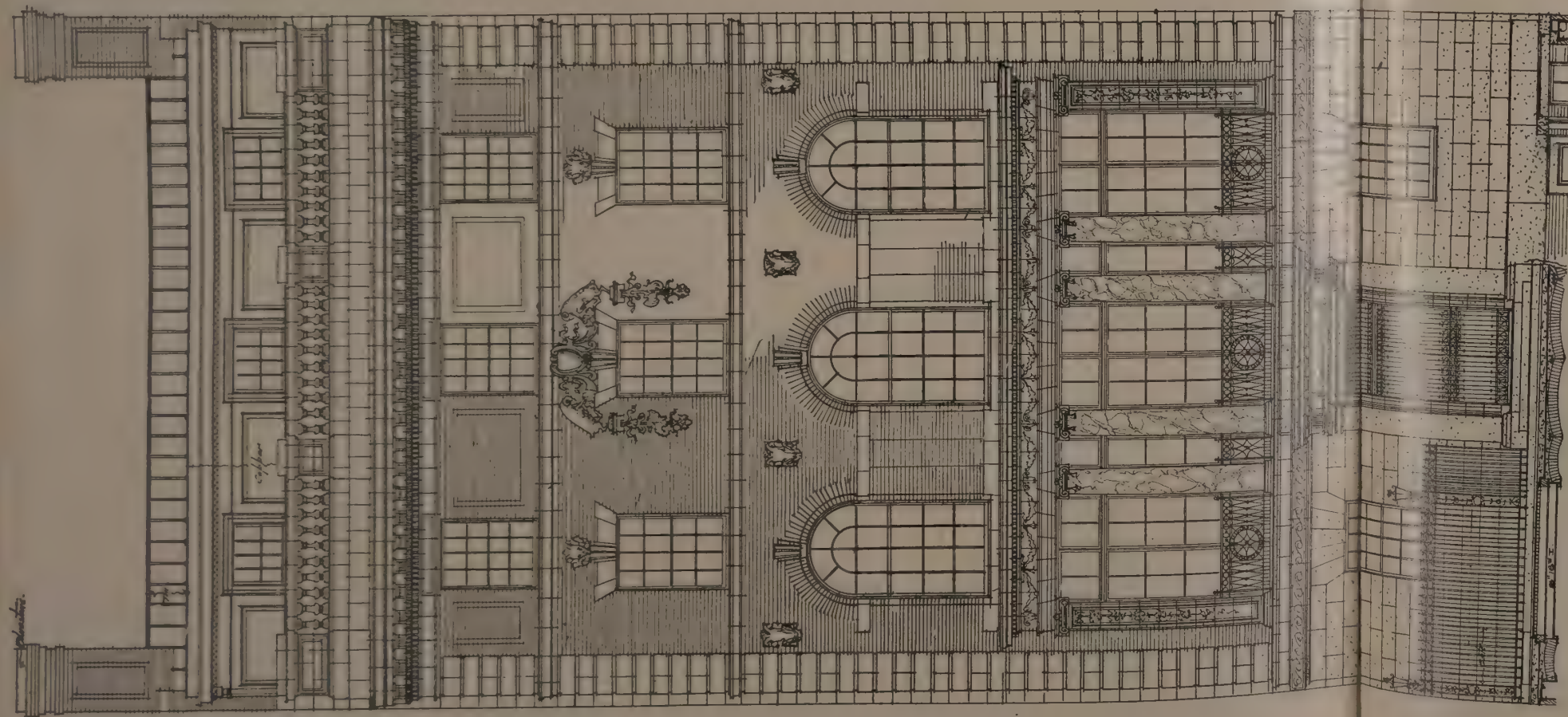


DETAILS OF PAVILION AND TOWER, PROVIDENCE HOSPITAL, WASHINGTON, D. C.
WOOD, DONN & DEMING, ARCHITECTS.

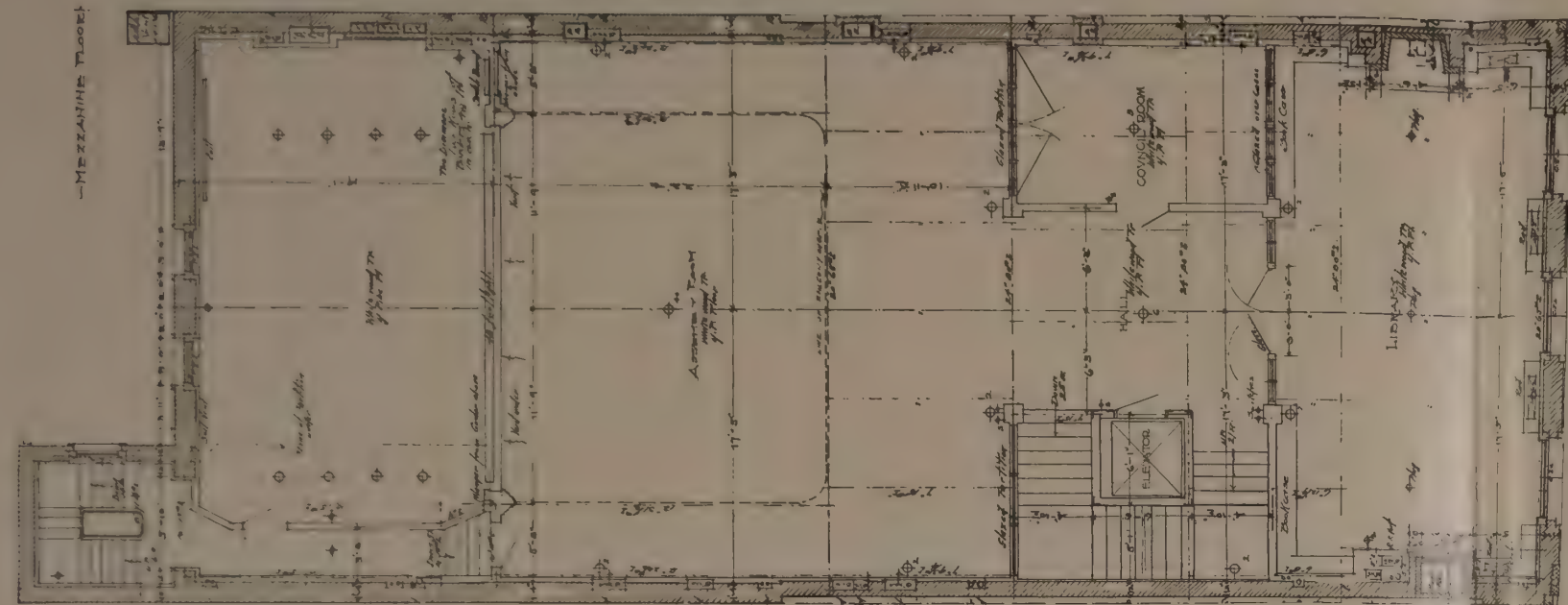




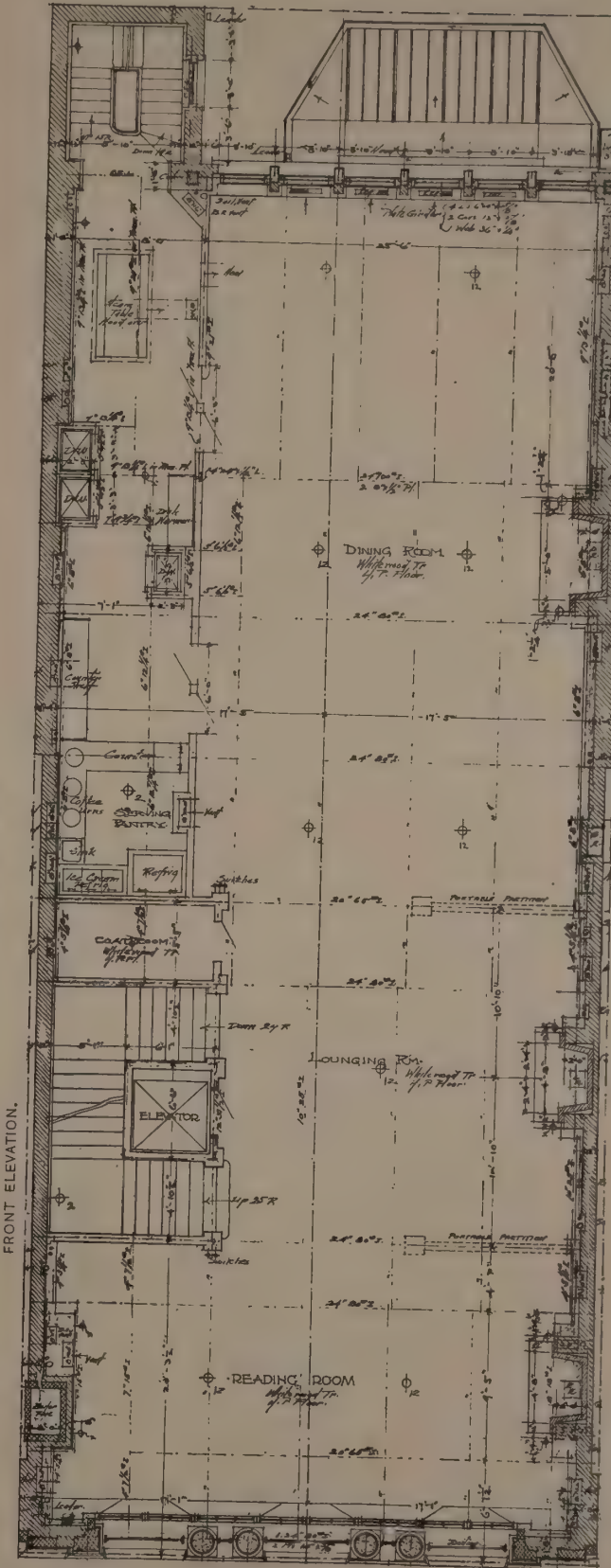
FIRST BAPTIST CHURCH, NEW HAVEN, CONN.
L. W. ROBINSON AND C. H. BLACKALL, ASSOCIATE ARCHITECTS.



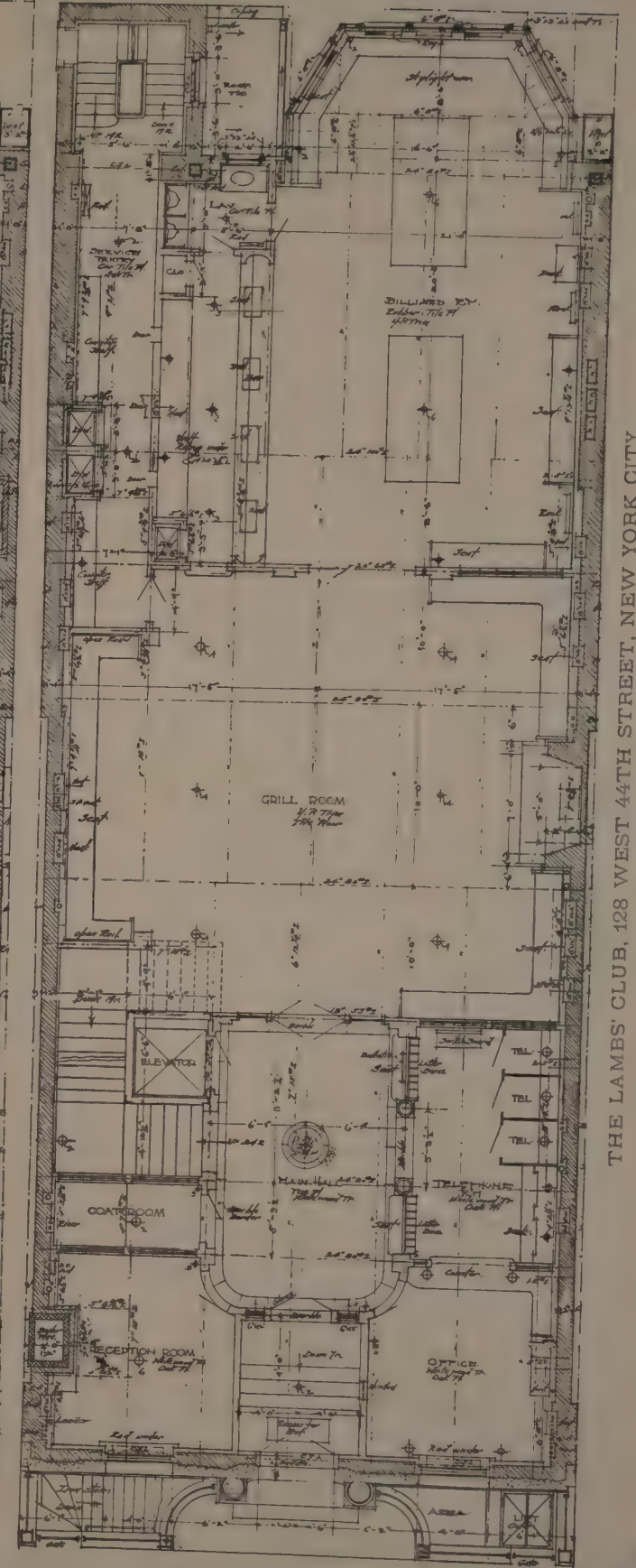
FRONT ELEVATION.



THIRD FLOOR PLAN.



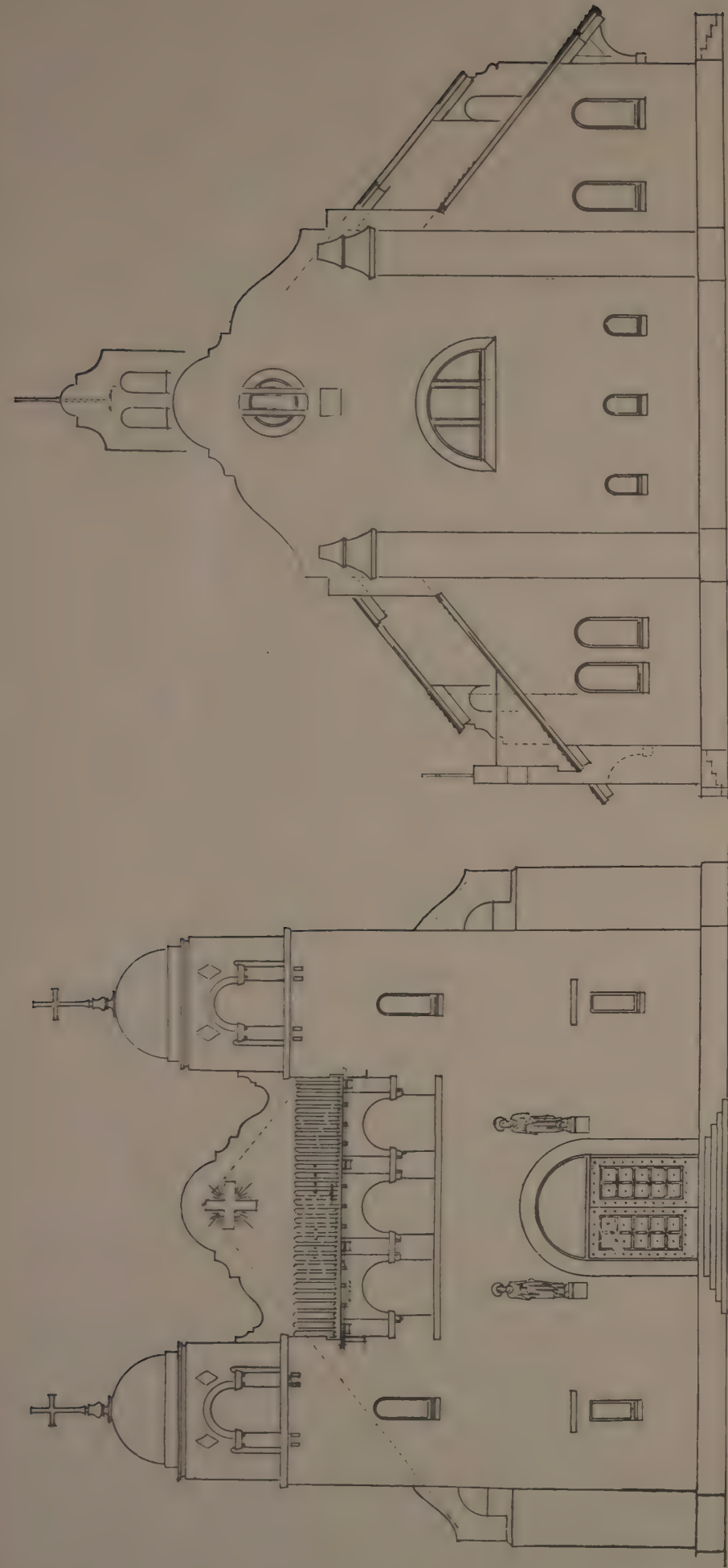
SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

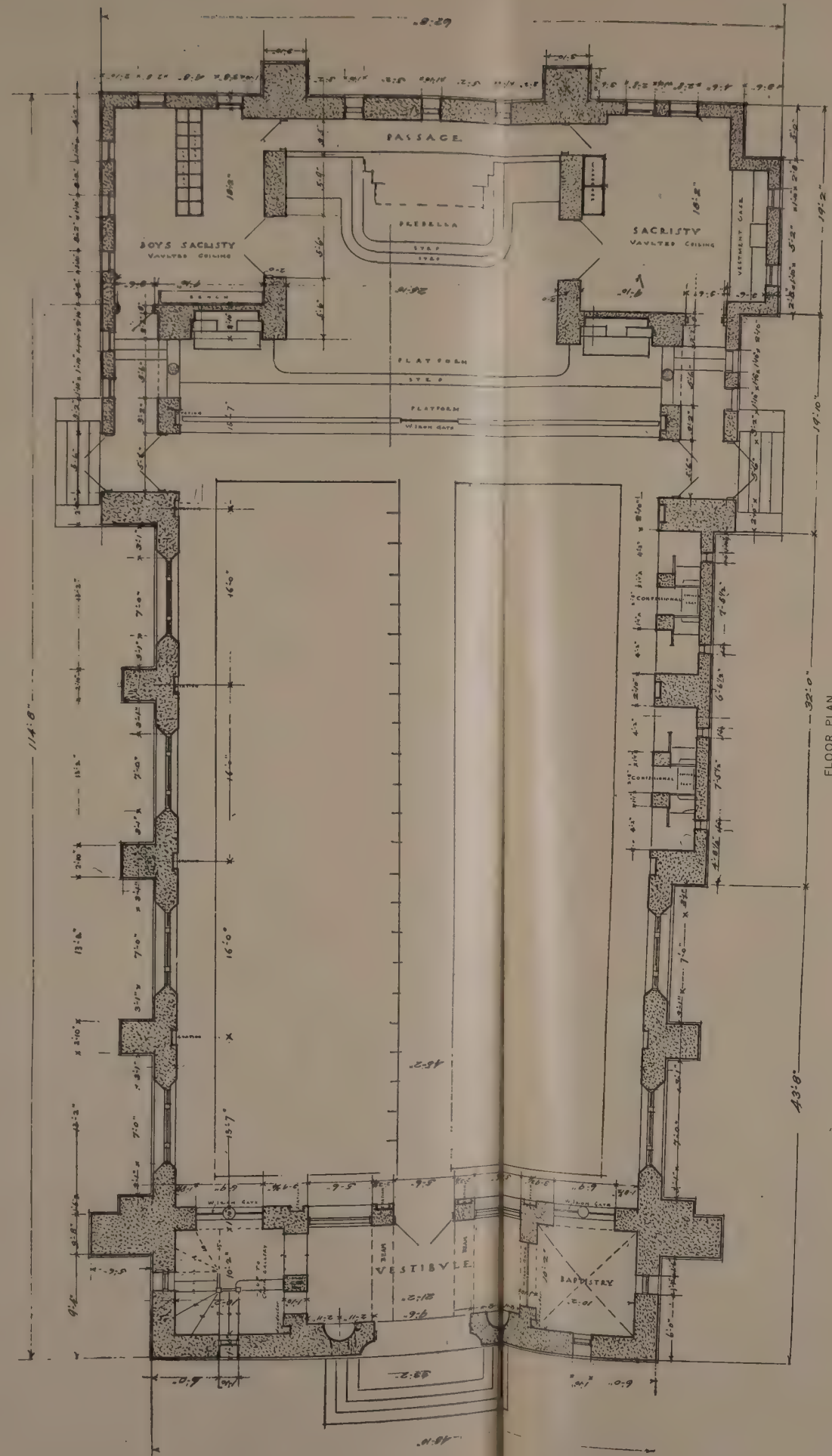
THE LAMBS' CLUB, 128 WEST 44TH STREET, NEW YORK CITY.

MCKIM, MEAD & WHITE, ARCHITECTS.

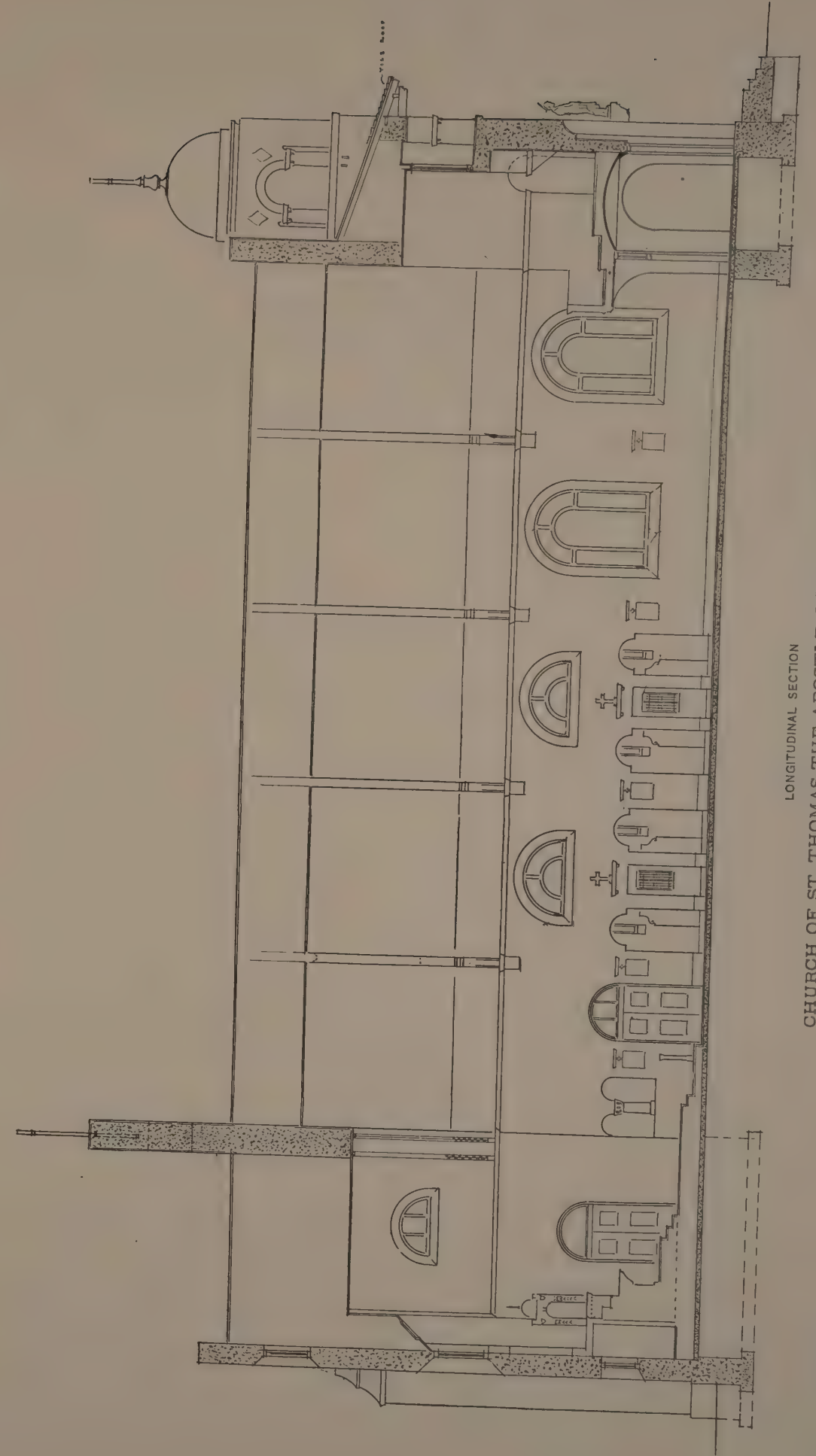


FRONT ELEVATION.

REAR ELEVATION.

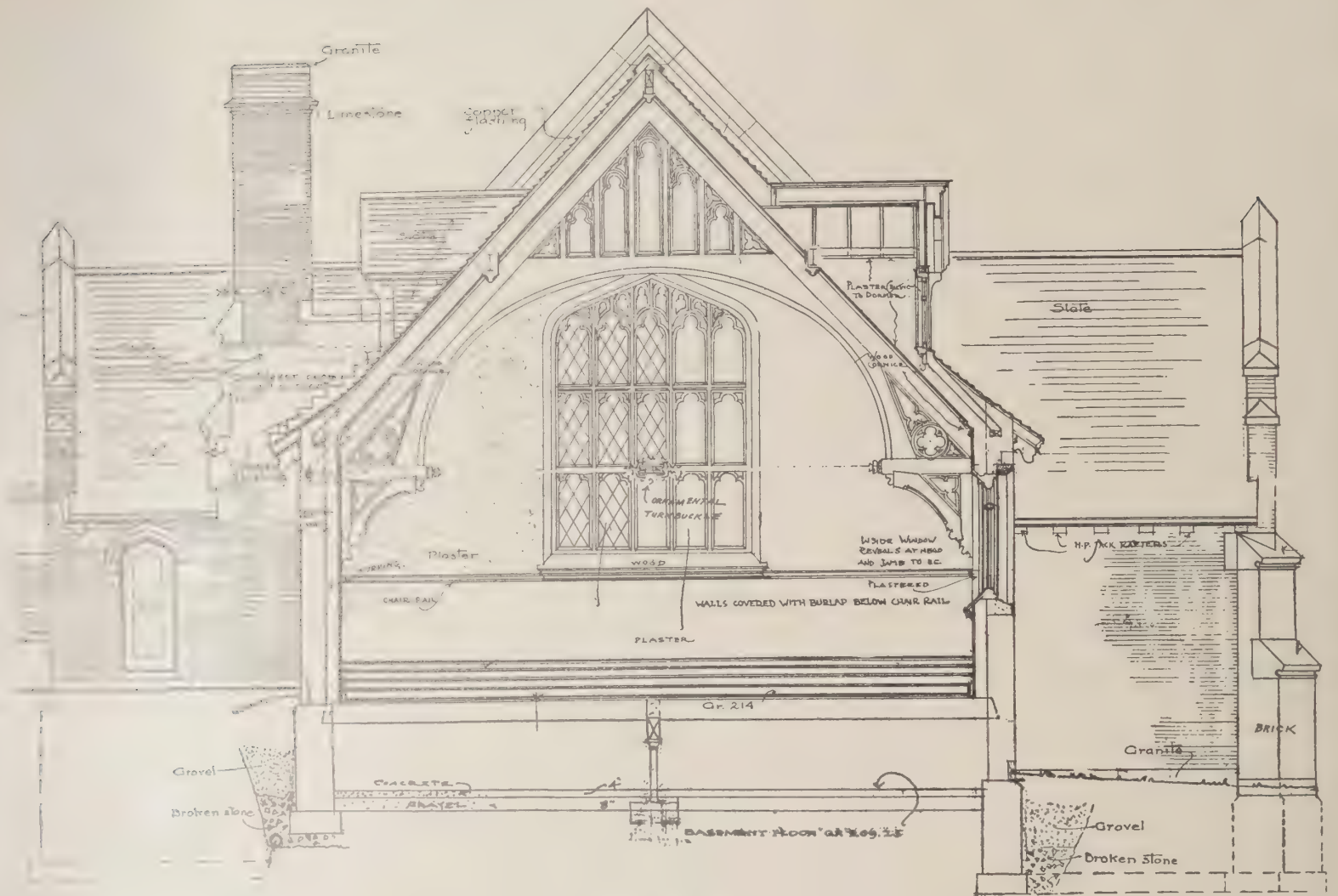


FLOOR PLAN.

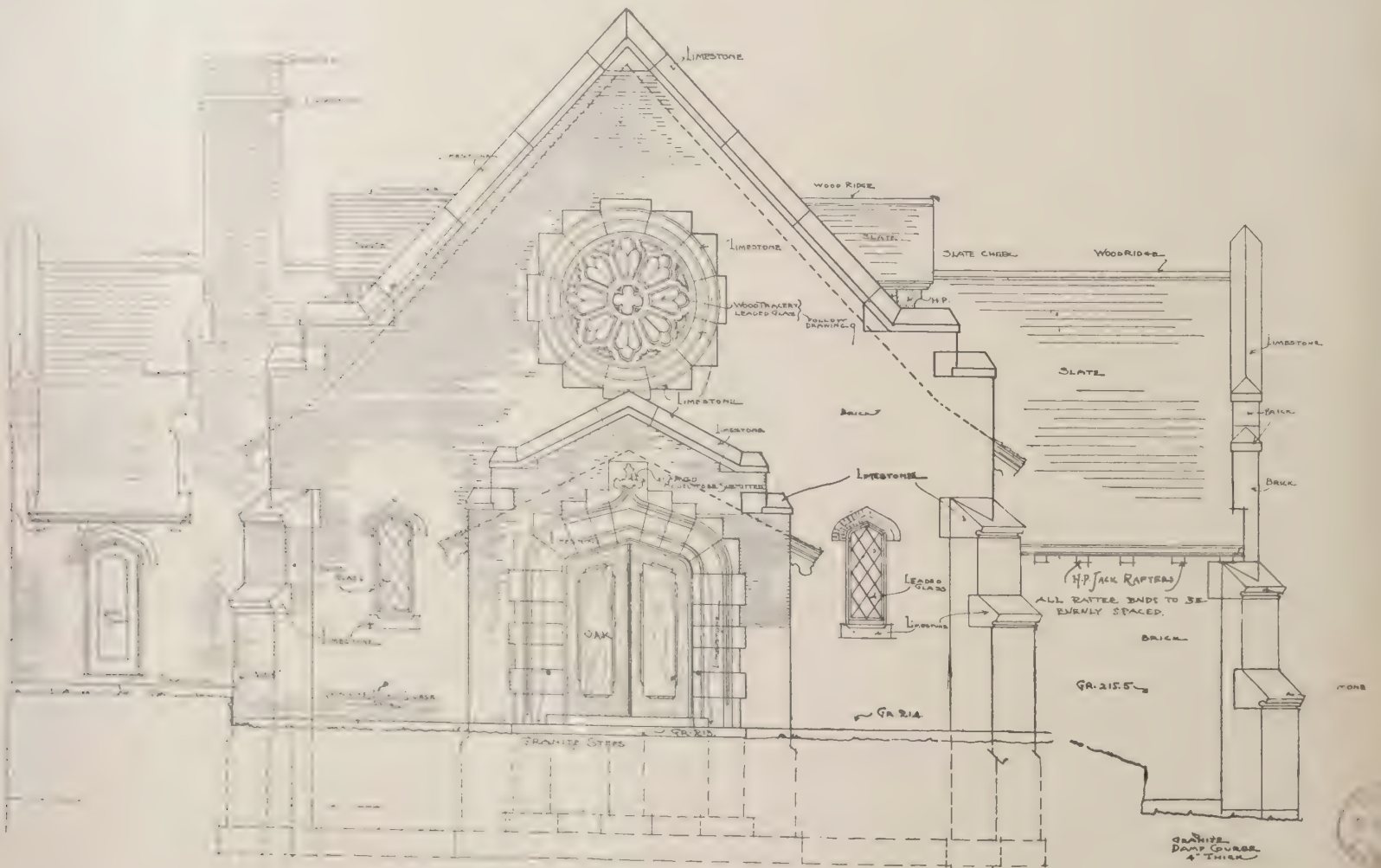


LONGITUDINAL SECTION

CHURCH OF ST. THOMAS THE APOSTLE, LOS ANGELES, CAL.
MAGINNIS, WALSH & SULLIVAN, ARCHITECTS.

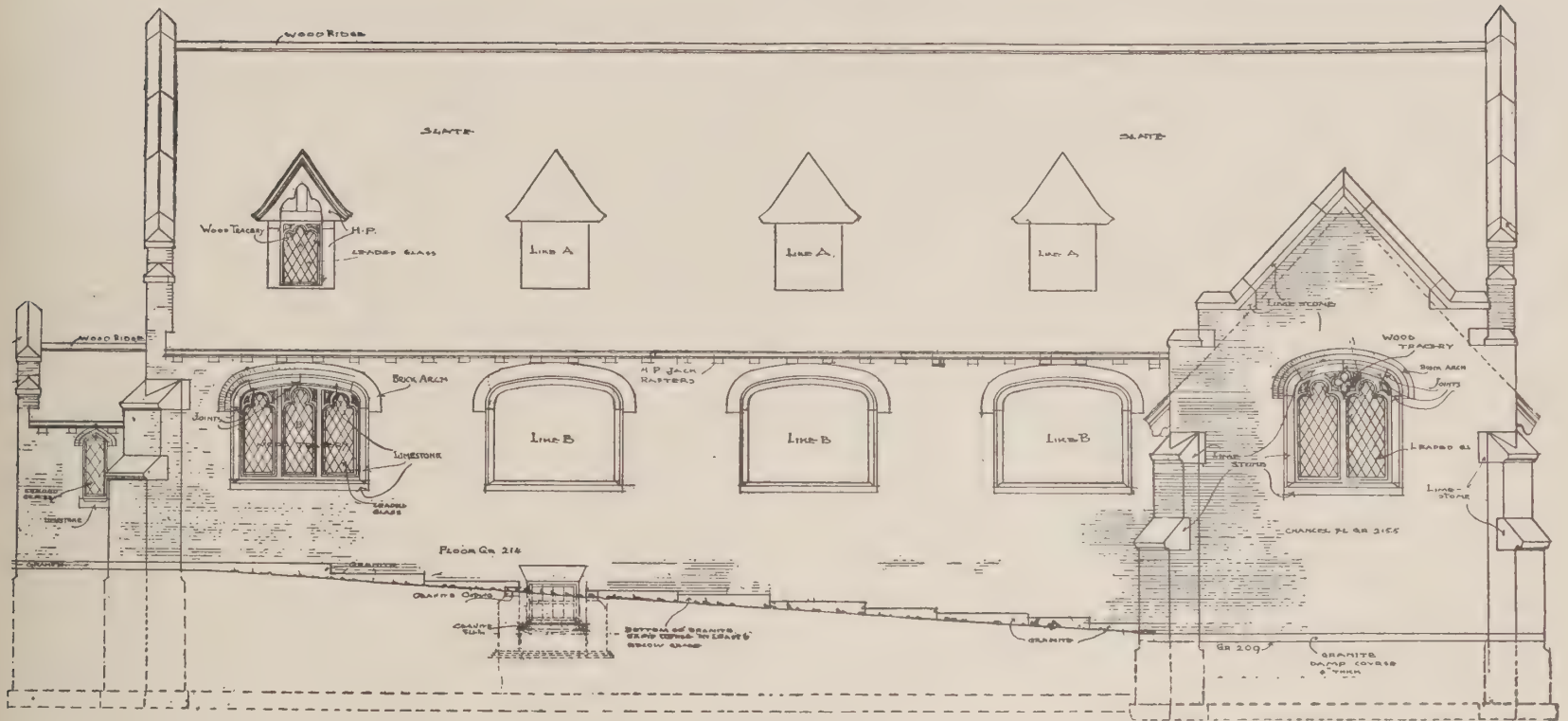


CROSS SECTION.

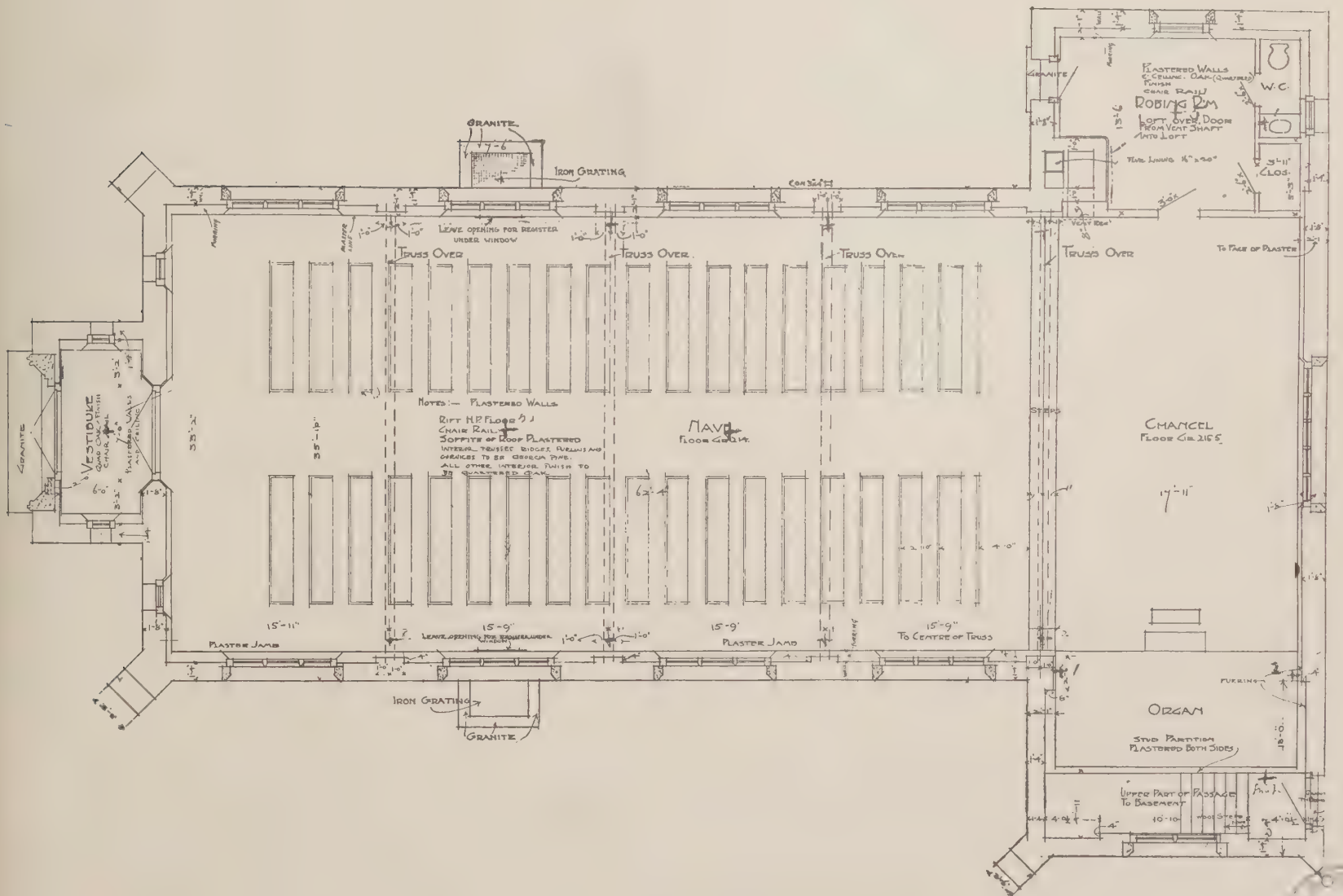


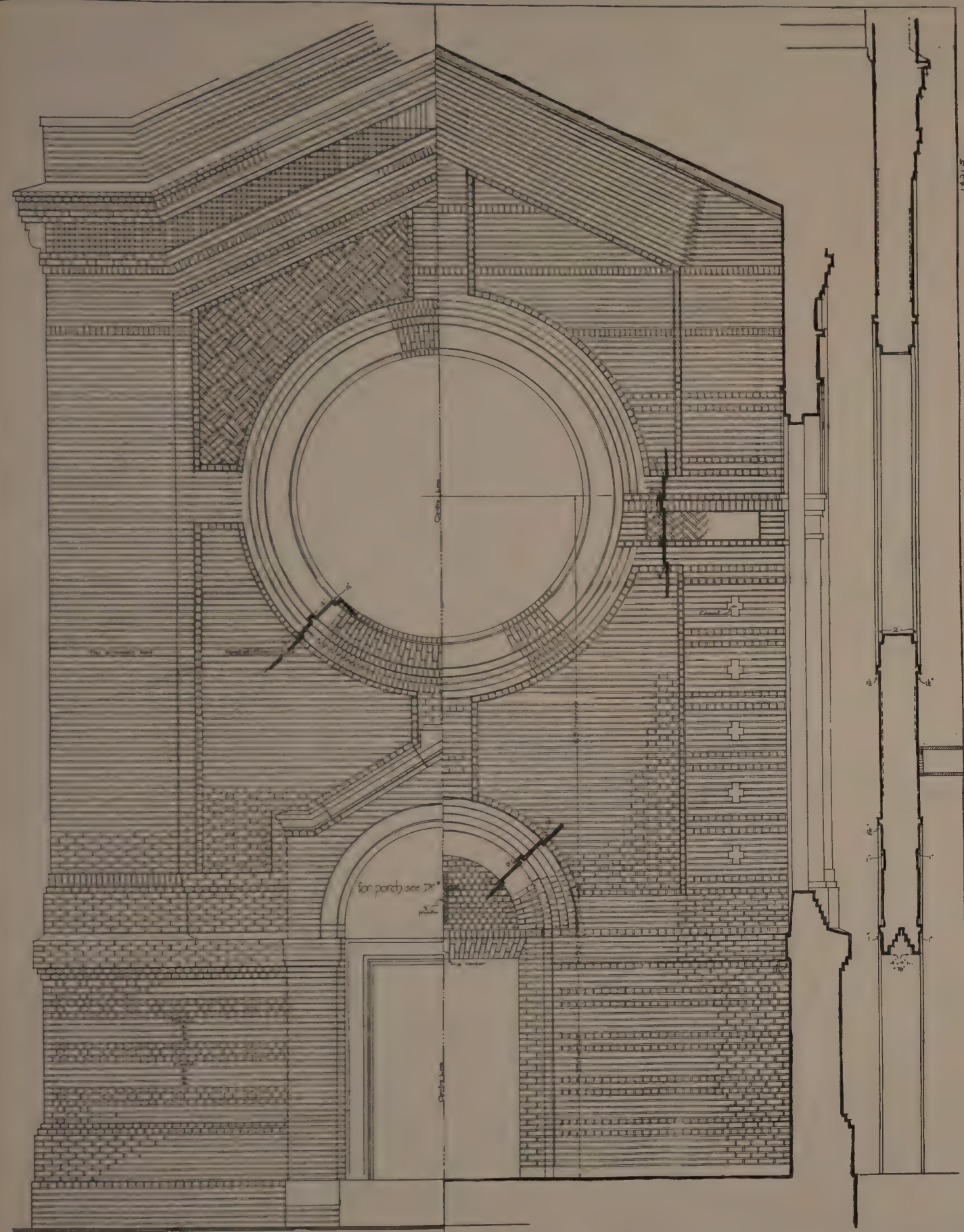
FRONT ELEVATION.

CHAPEL FOR MCLEAN HOSPITAL, WAVERLEY, MASS.
WHEELWRIGHT & HAVEN, ARCHITECTS.



SIDE ELEVATION.

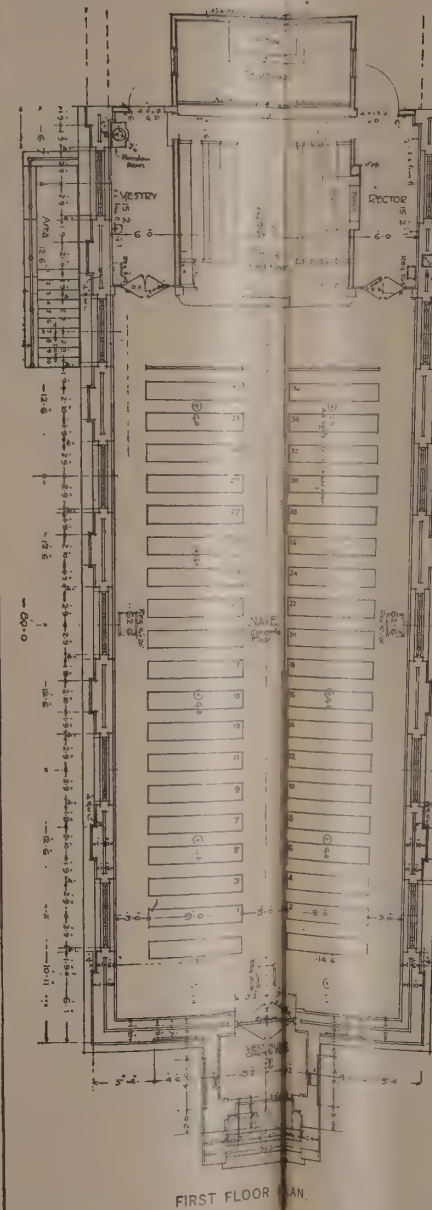




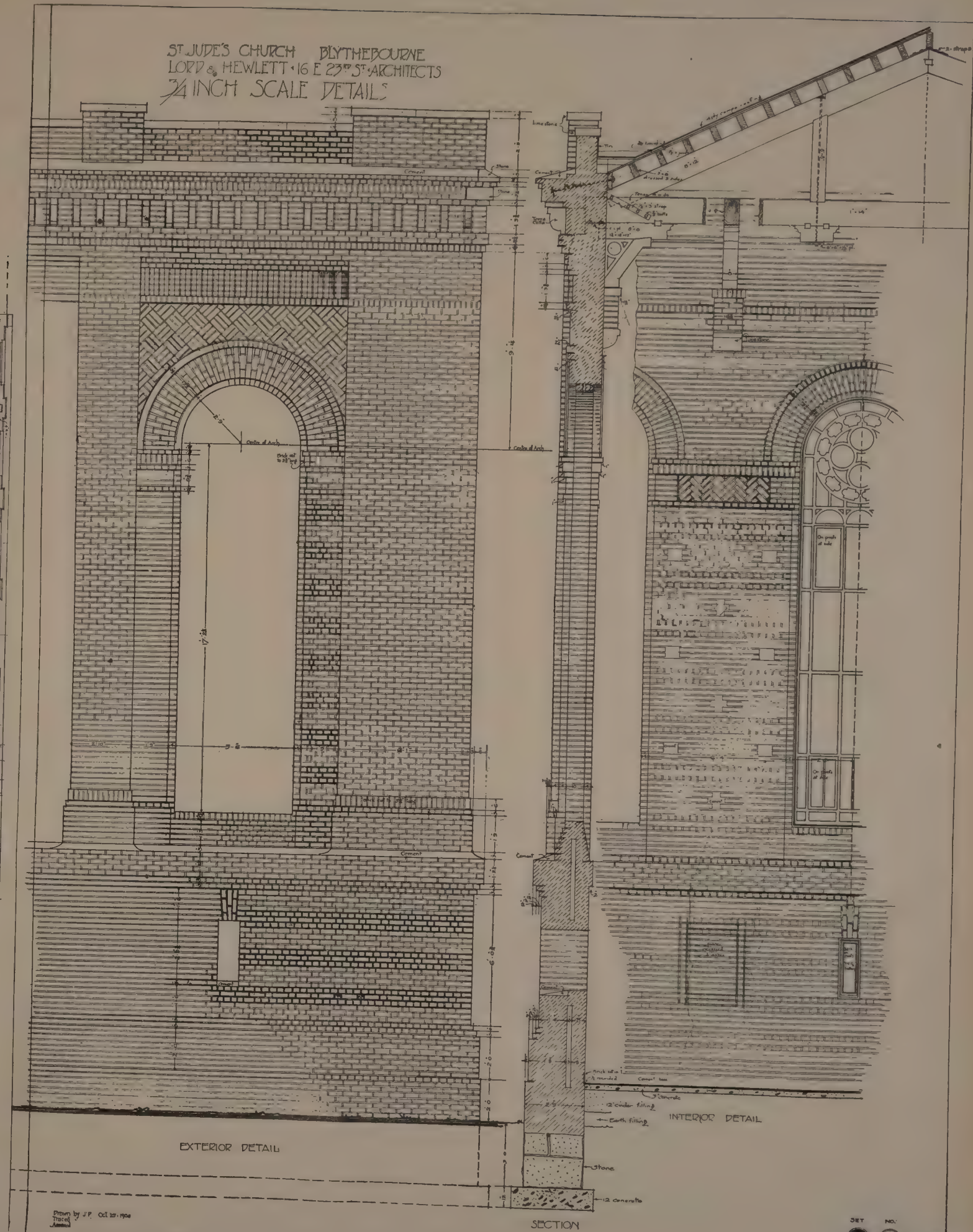
HALF OUTSIDE ELEVATION

HALF INSIDE ELEVATION

SECTION-SIDE WALL SECTION-FRONT WALL



FIRST FLOOR PLAN



EXTERIOR DETAIL

INTERIOR DETAIL

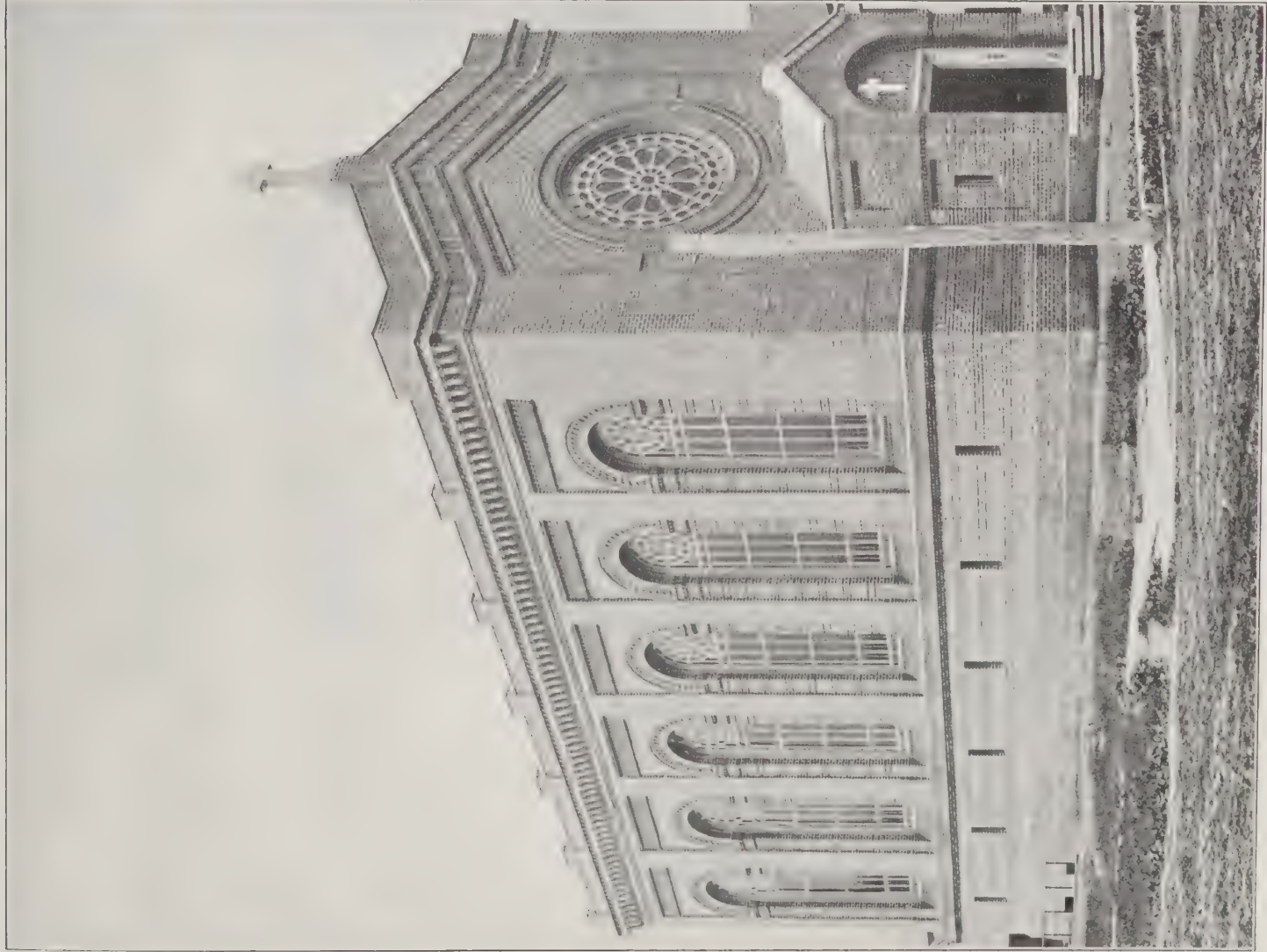
SECTION



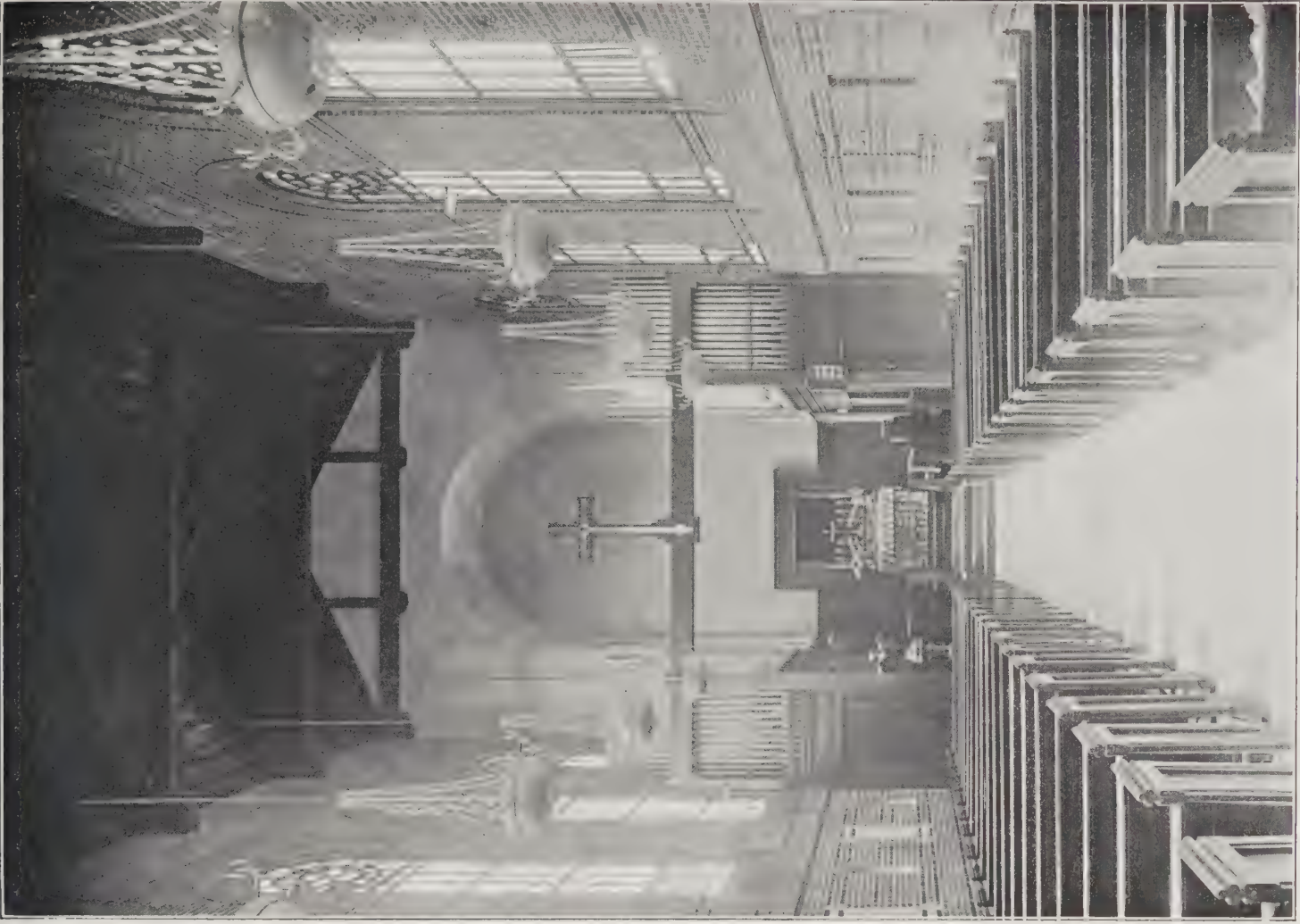
Church of St. Thomas the Apostle, Los Angeles, Cal.
MAGINNIS, WALSH & SULLIVAN, ARCHITECTS.



THE LAMBS' CLUB, NEW YORK CITY.
MCKIM, MEAD & WHITE, ARCHITECTS.



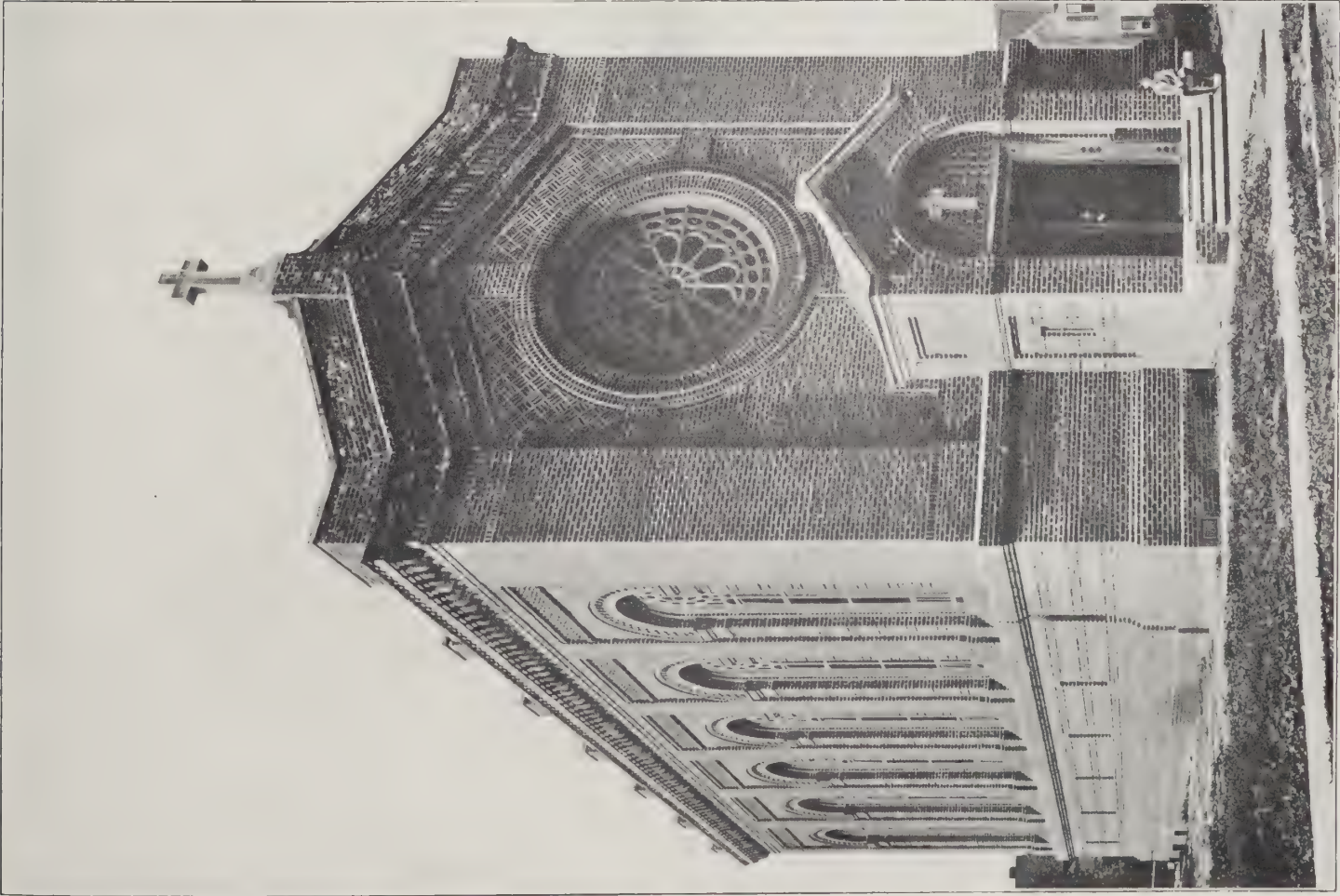
ST. JUDE'S CHURCH, BROOKLYN, N. Y.
LORD & HEWLETT, ARCHITECTS.



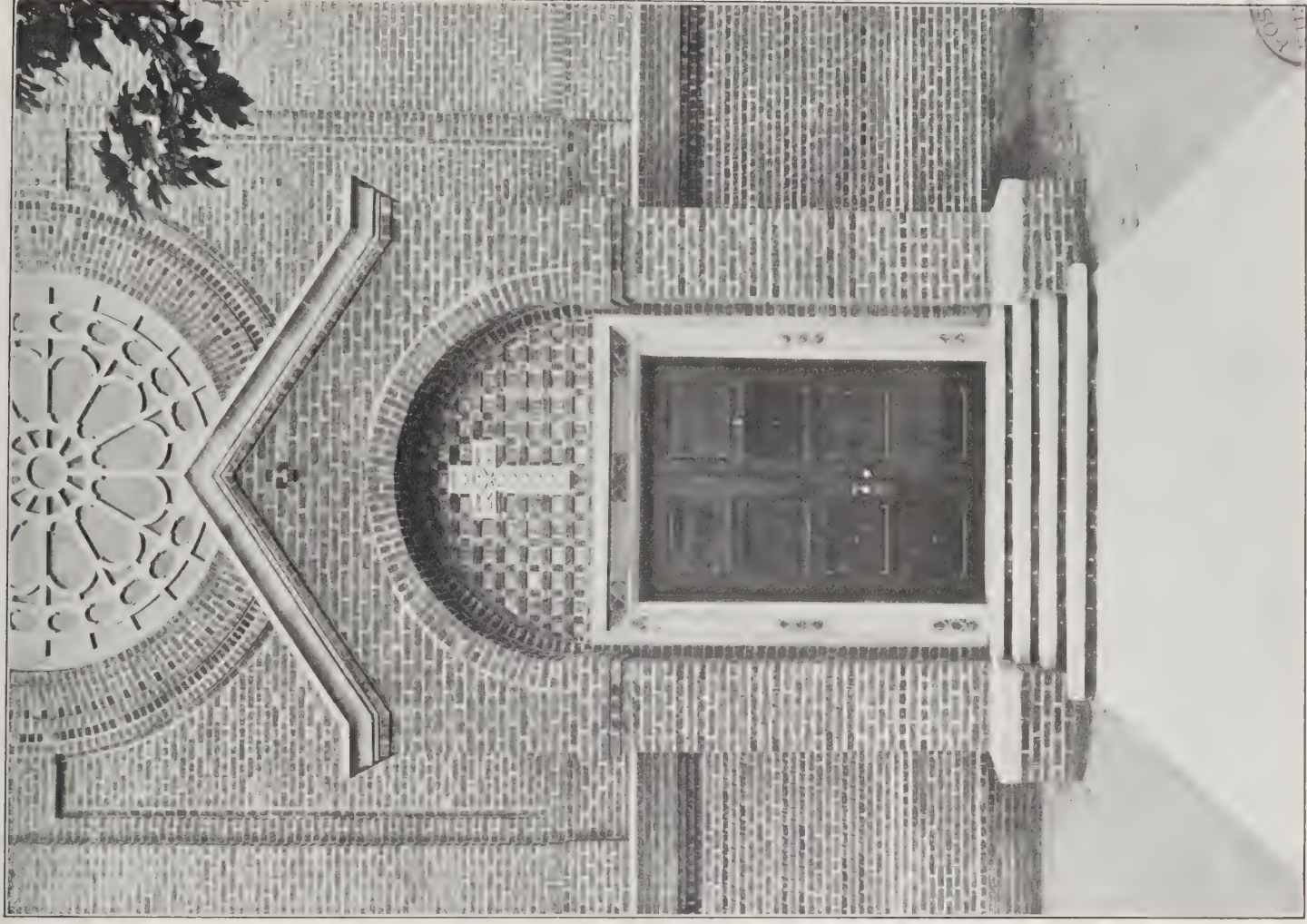
THE BRICKBUILDER,
SEPTEMBER,
1905.

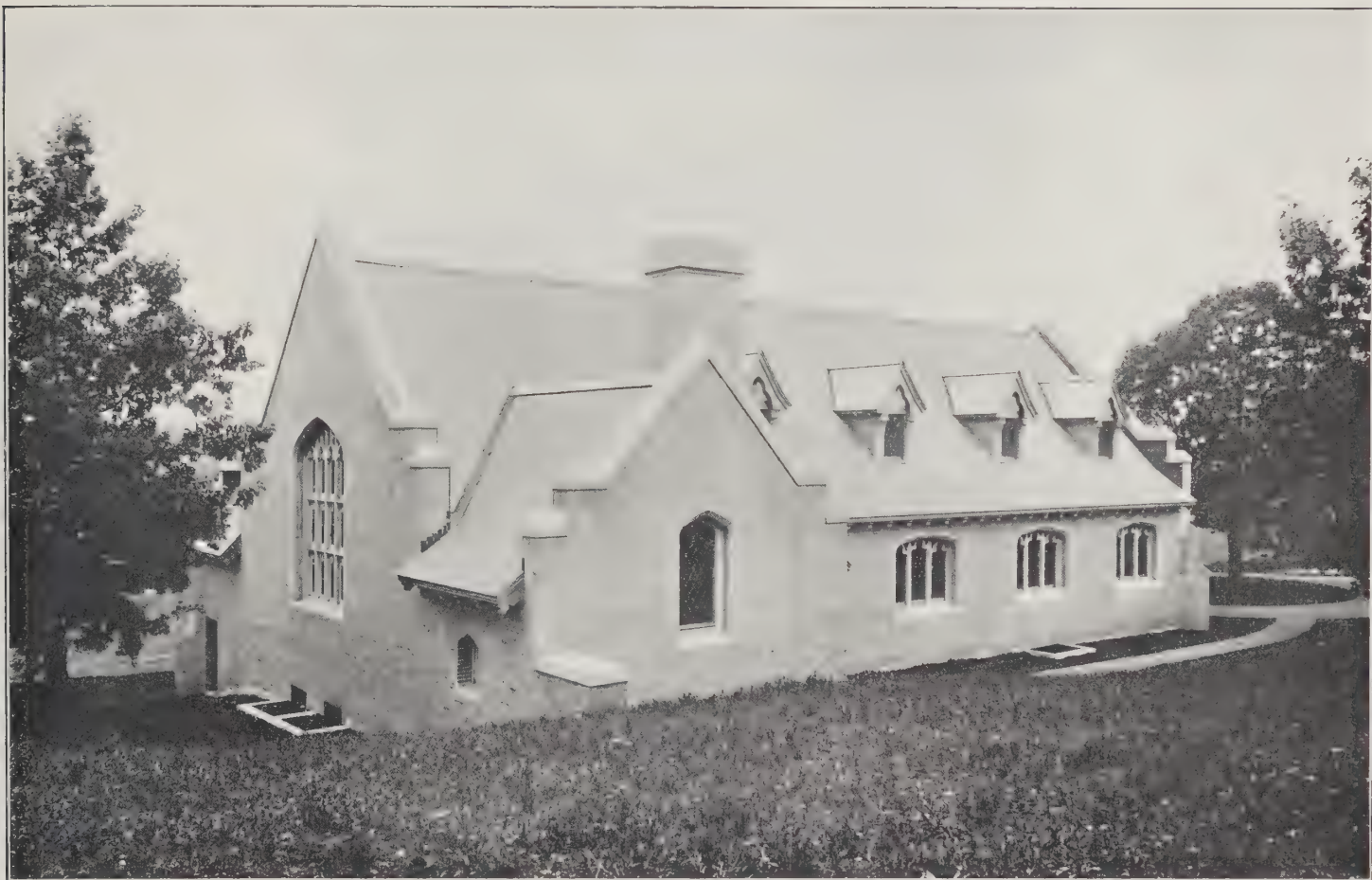


SEARLES MEMORIAL SCHOOL, METHUEN, MASS.
HENRY VAUGHAN, ARCHITECT.



ST. JUDE'S CHURCH, BROOKLYN, N. Y.
LORD & HEWLETT ARCHITECTS.

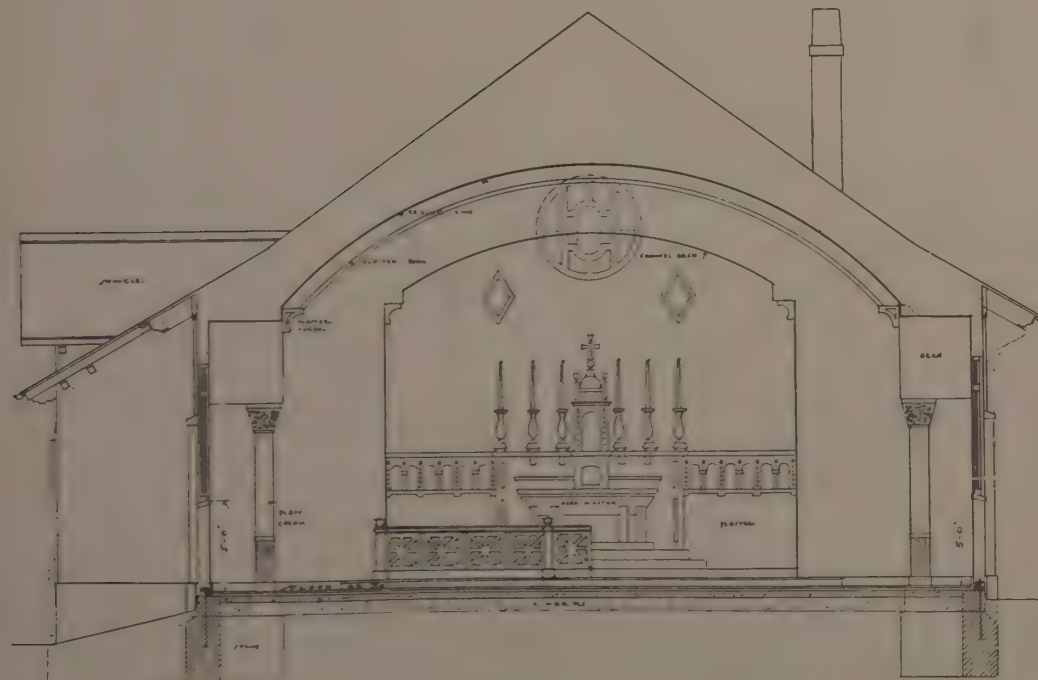




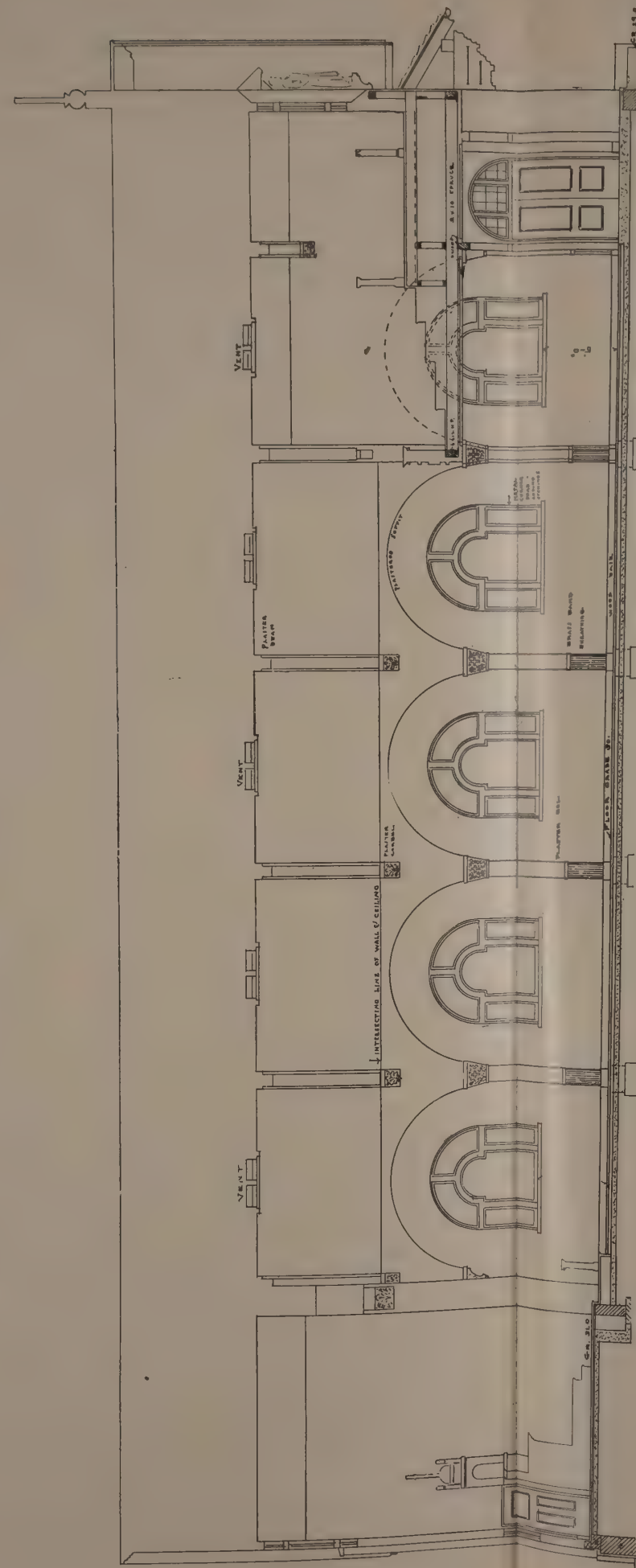
CHAPEL FOR MCLEAN HOSPITAL, WAVERLEY, MASS.
WHEELWRIGHT & HAVEN, ARCHITECTS.



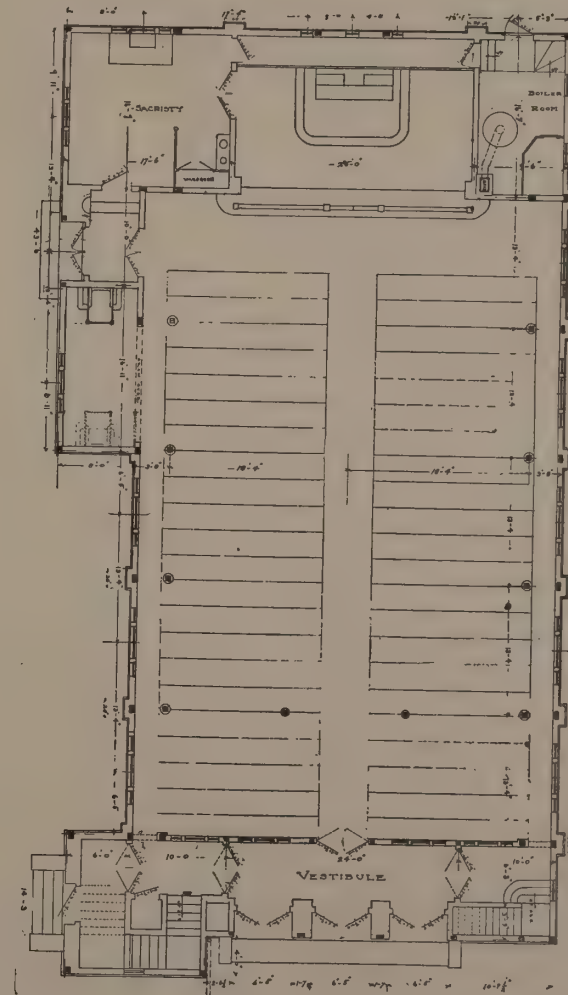
FRONT ELEVATION



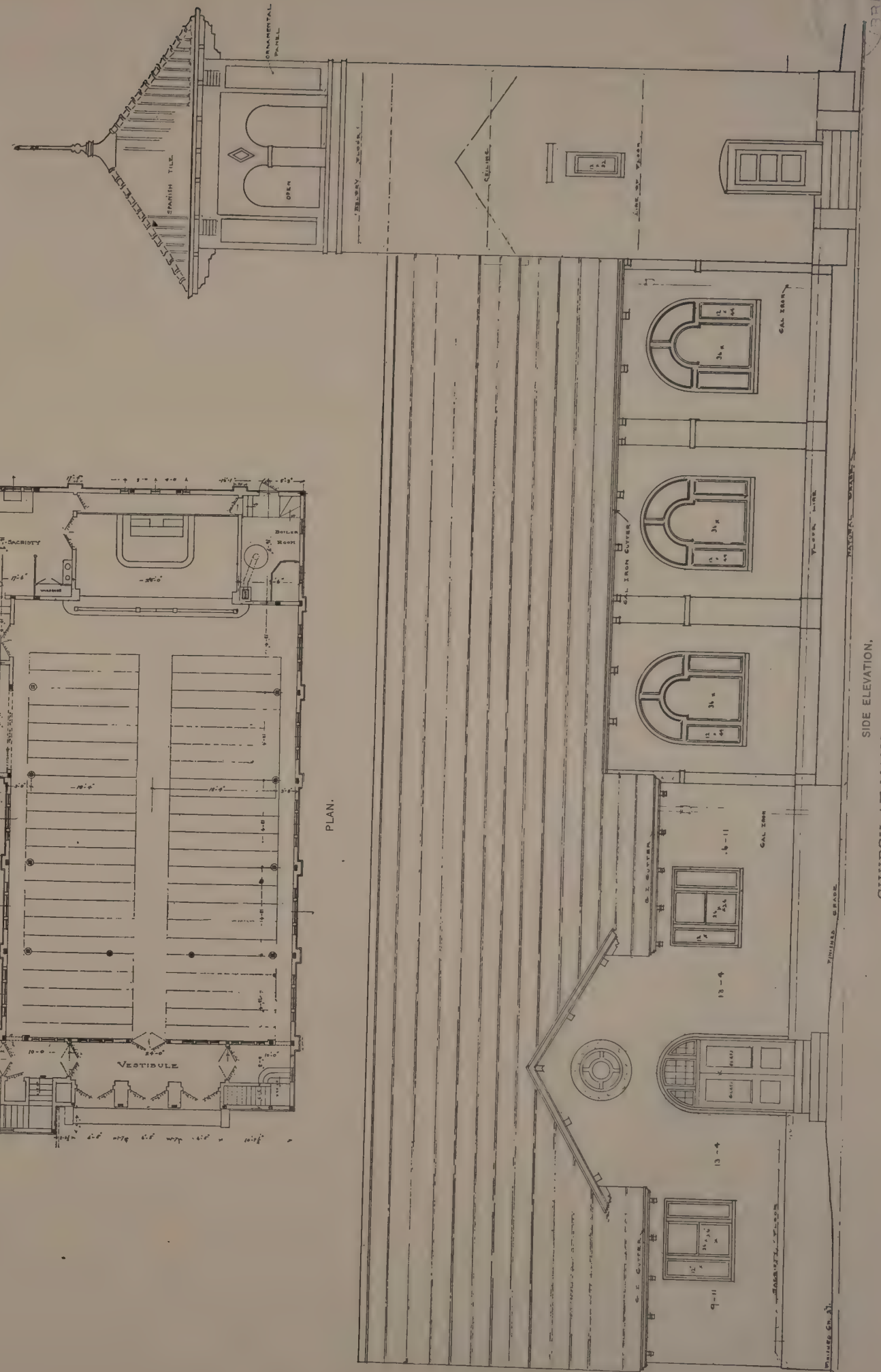
TRANSVERSE SECTION.



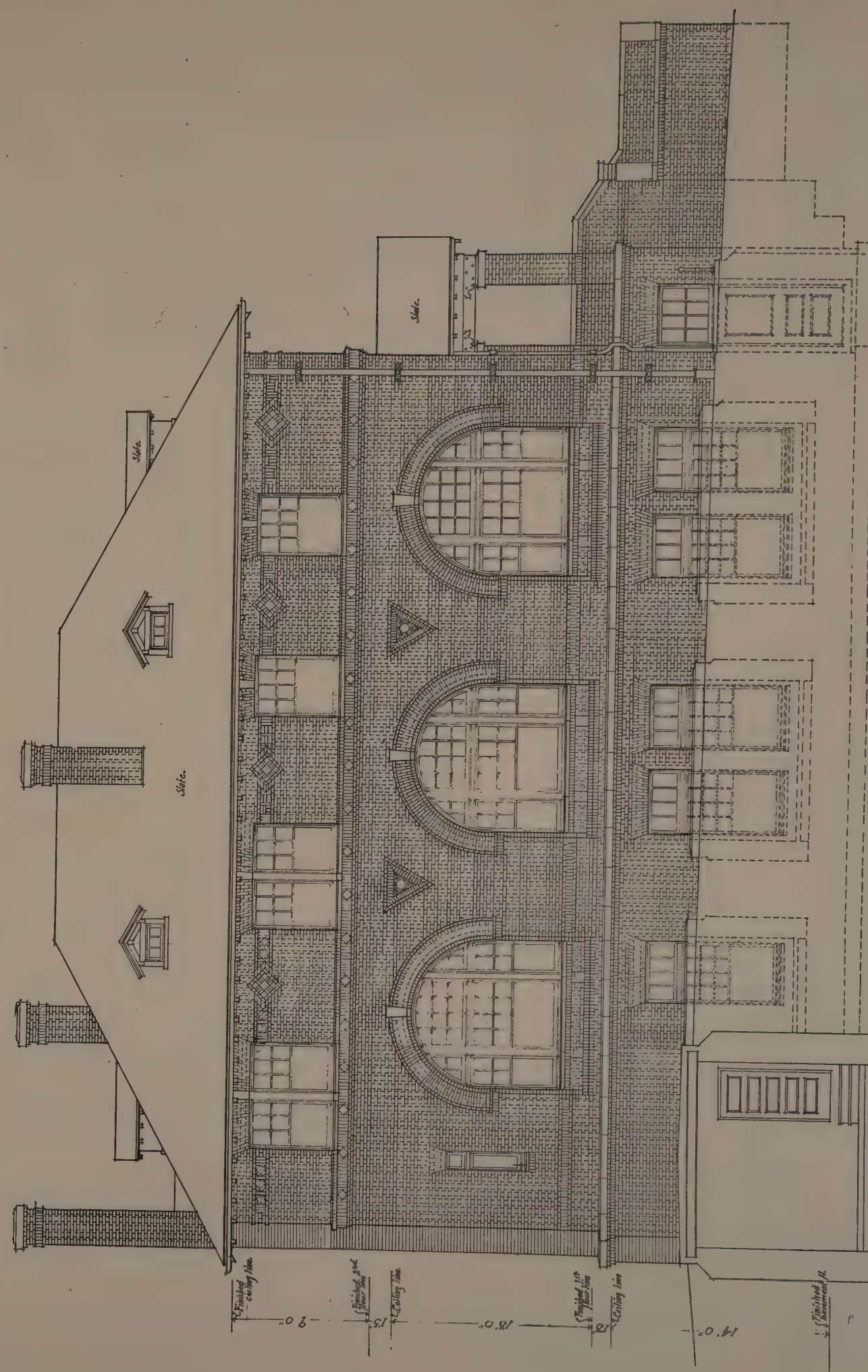
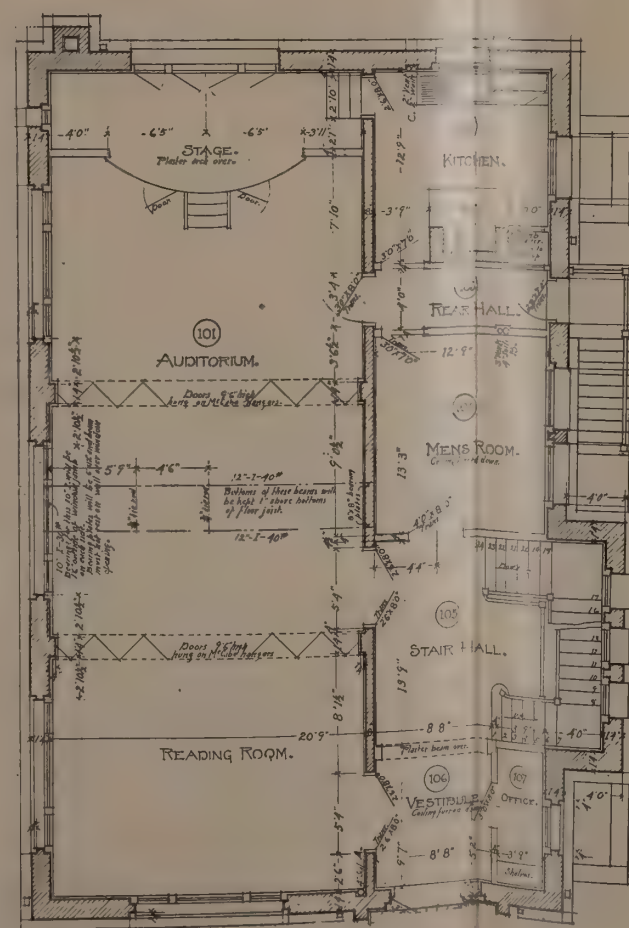
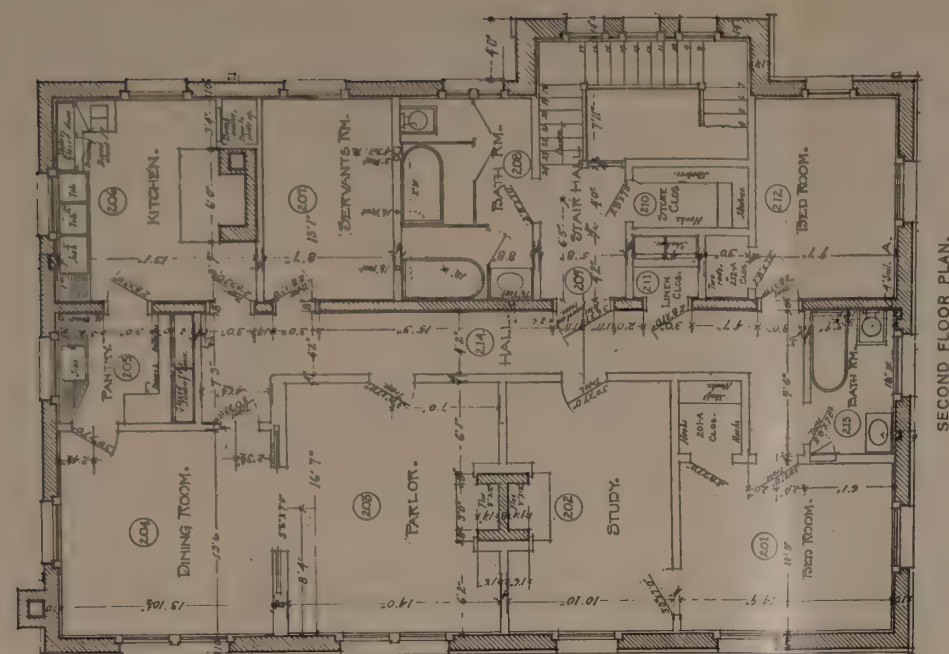
LONGITUDINAL SECTION.



PLAN.

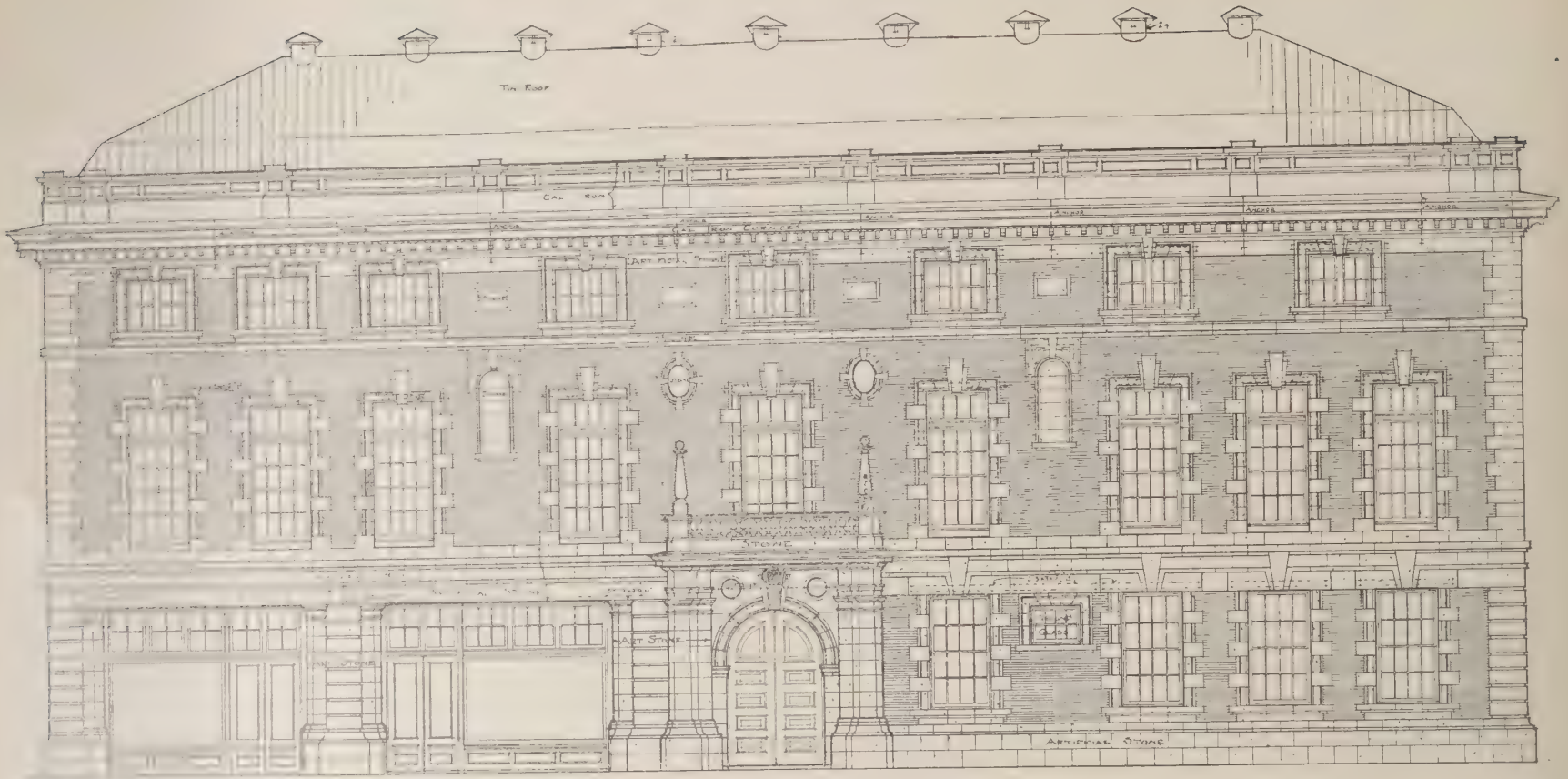


SIDE ELEVATION.
CHURCH AT MANCHESTER-BY-THE-SEA, MASS.
MAGINNIS, WALSH & SULLIVAN, ARCHITECTS.

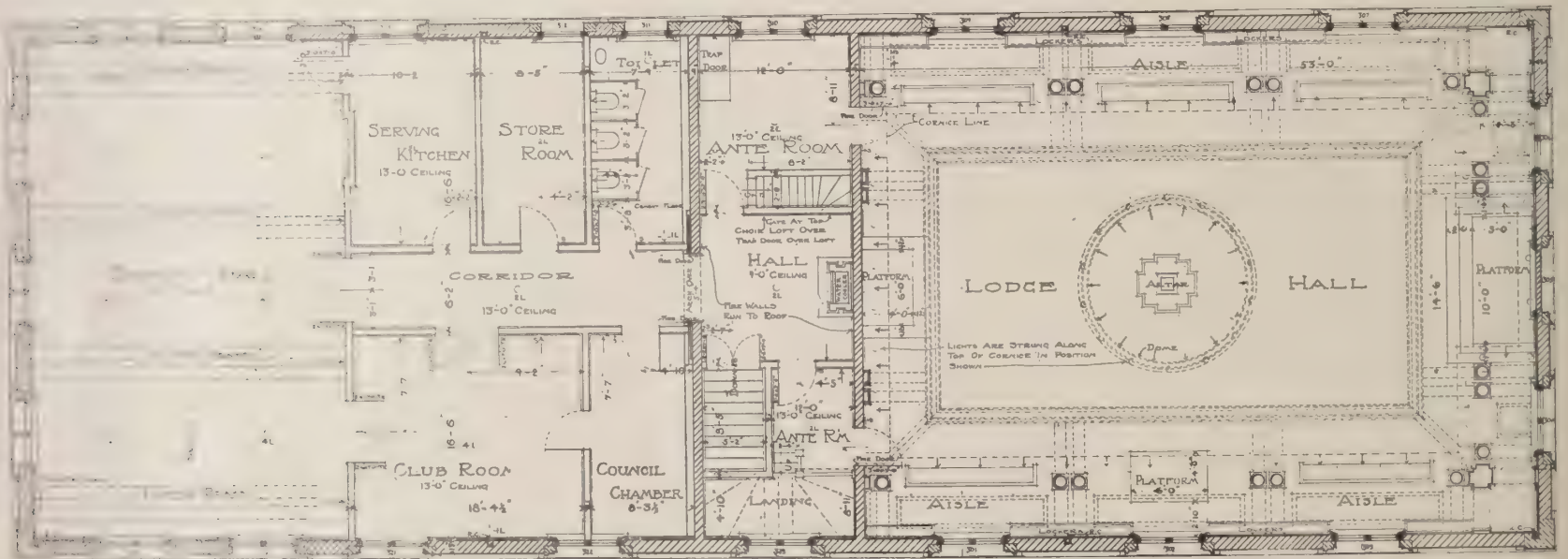


SIDE ELEVATION.

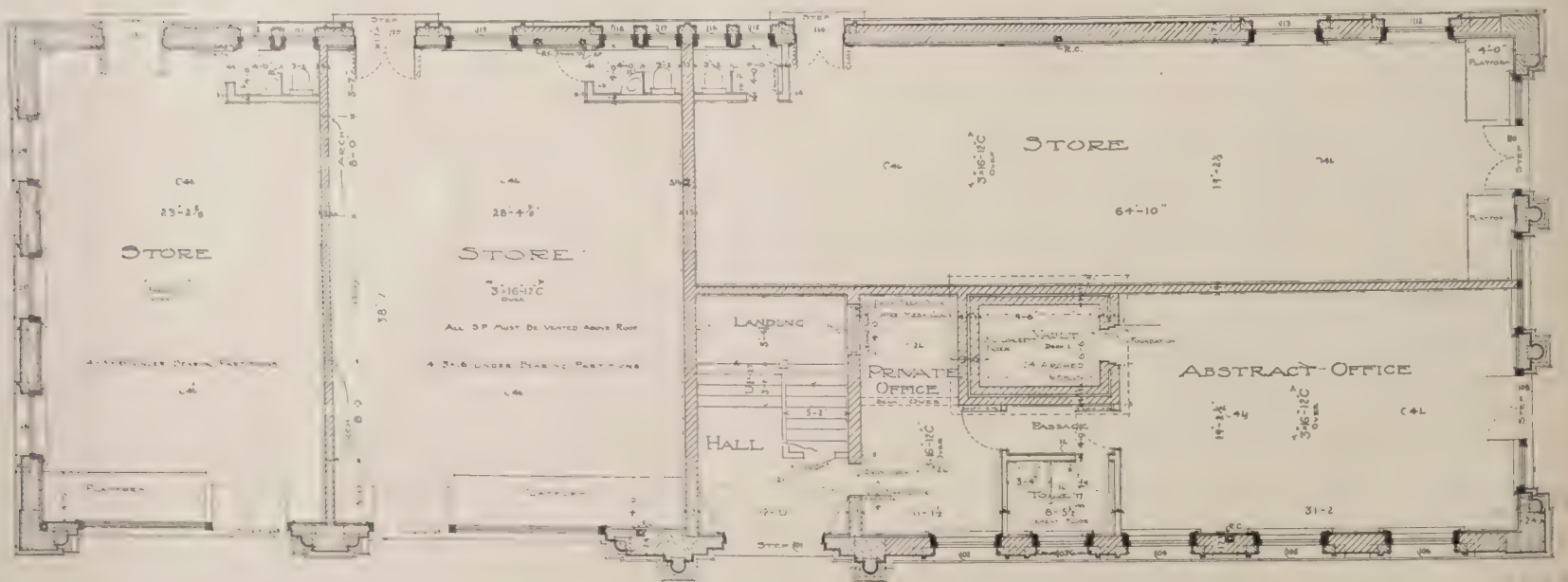
IMMANUEL CHAPEL HOUSE, YONKERS, N. Y.
BUTLER & RODMAN, ARCHITECTS.



FRONT ELEVATION.

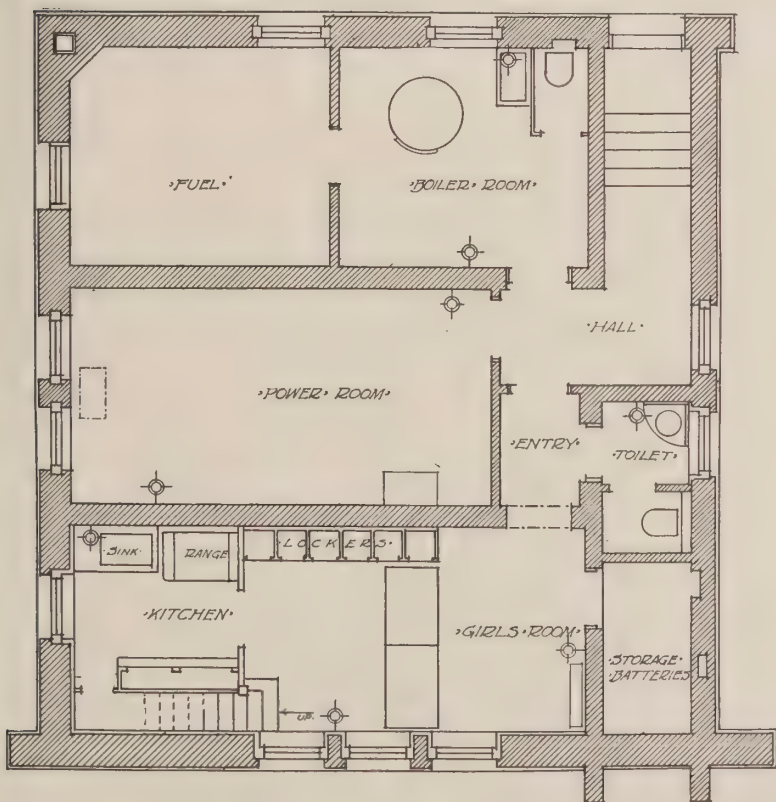


THIRD FLOOR PLAN. (THE SECOND FLOOR IS DIVIDED INTO OFFICE SUITES FOR RENTING.)

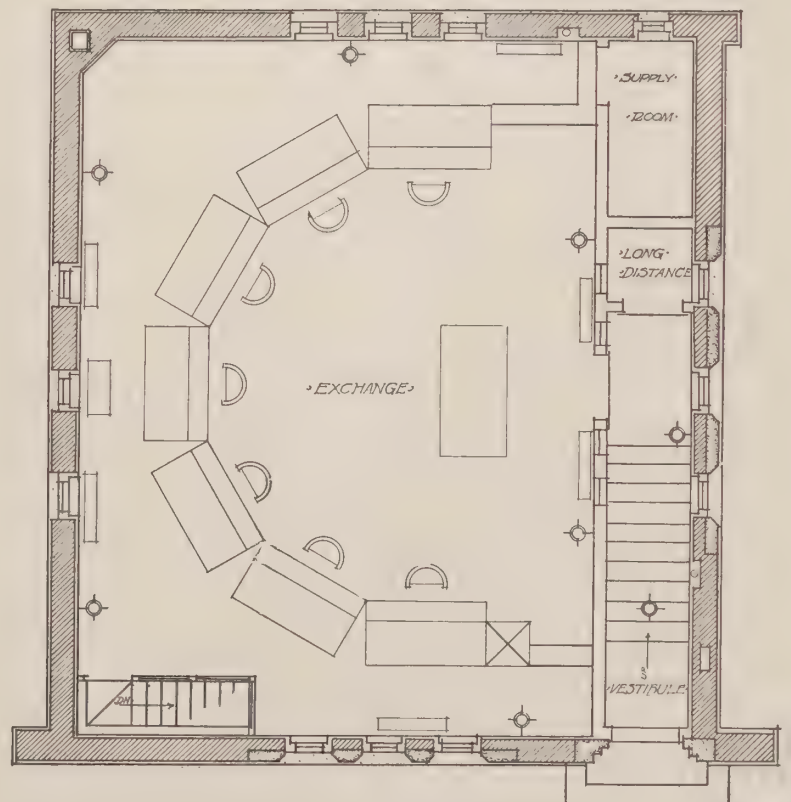


FIRST FLOOR PLAN.

OFFICE AND SOCIETY BUILDING, MIAMI, FLA.
WALTER C. DEGARGO, ARCHITECT.



BASEMENT PLAN.



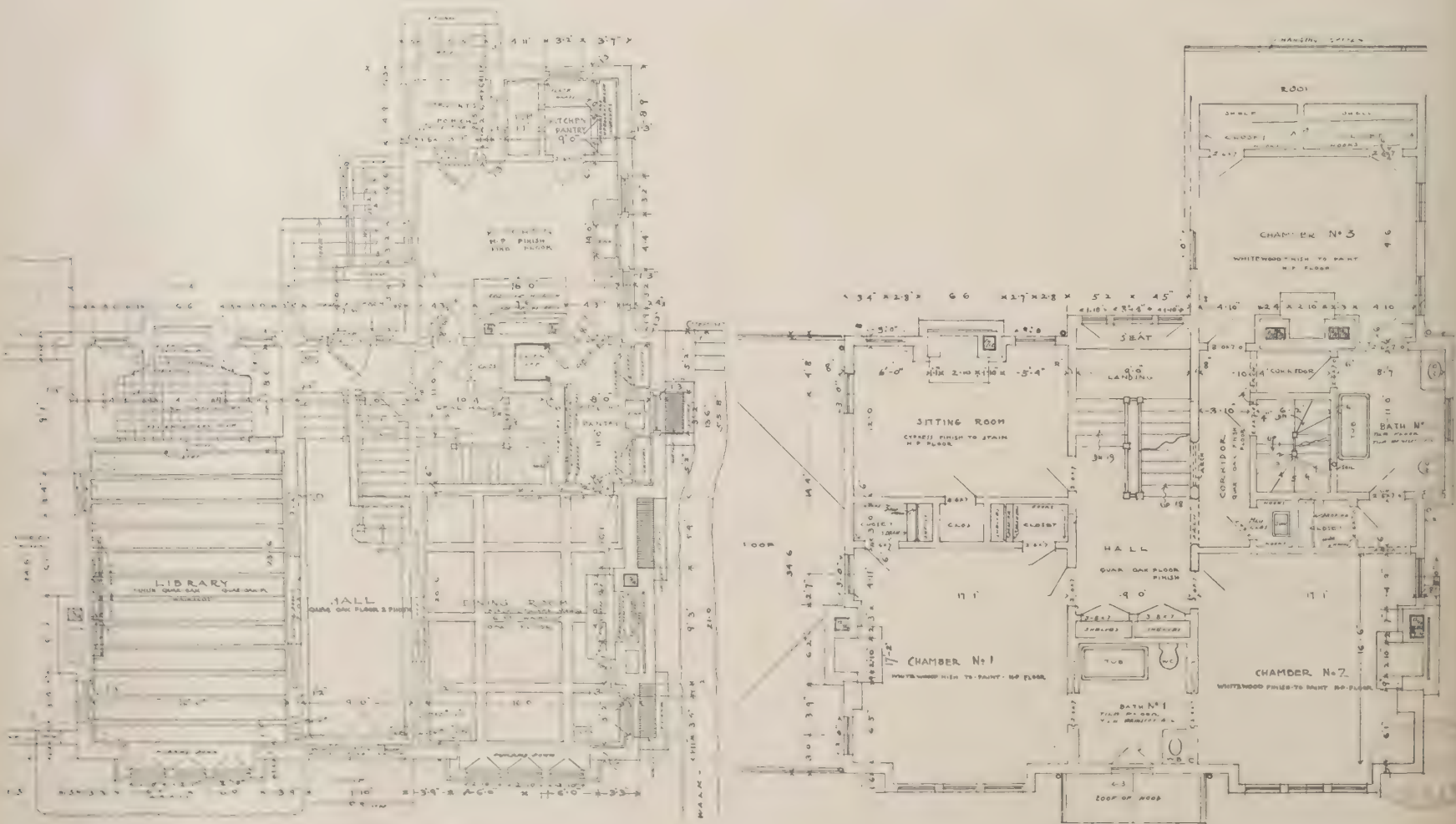
FIRST FLOOR PLAN.

BRANCH TELEPHONE STATION, CLEVELAND, OHIO.

SEARLES, HIRSH & GAVIN, ARCHITECTS.



FRONT ELEVATION.

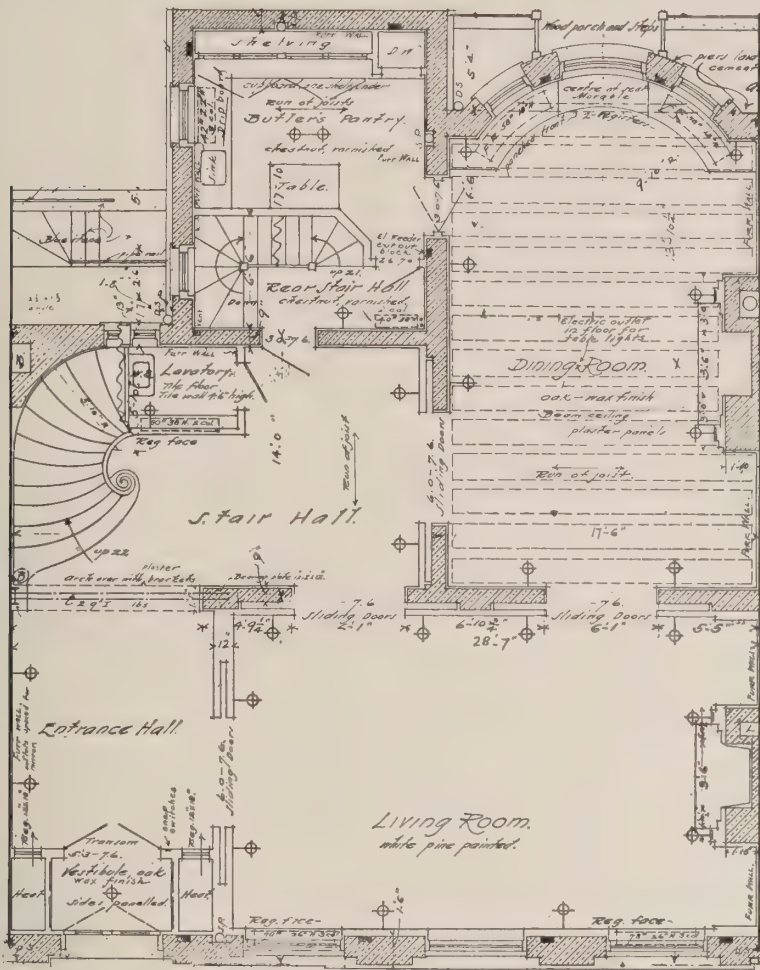


FIRST FLOOR PLAN.

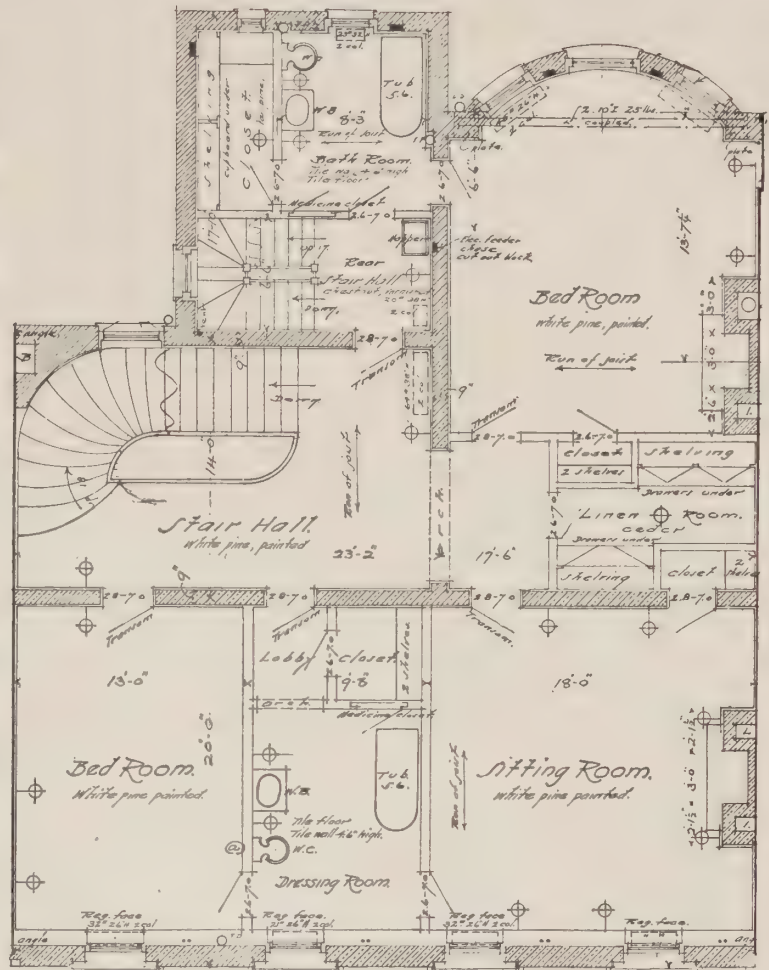
SECOND FLOOR PLAN.

HOUSE FOR ROBERT PITCAIRN, JR., ESQ., PITTSBURG, PA.

MACCLURE & SPAHR, ARCHITECTS.

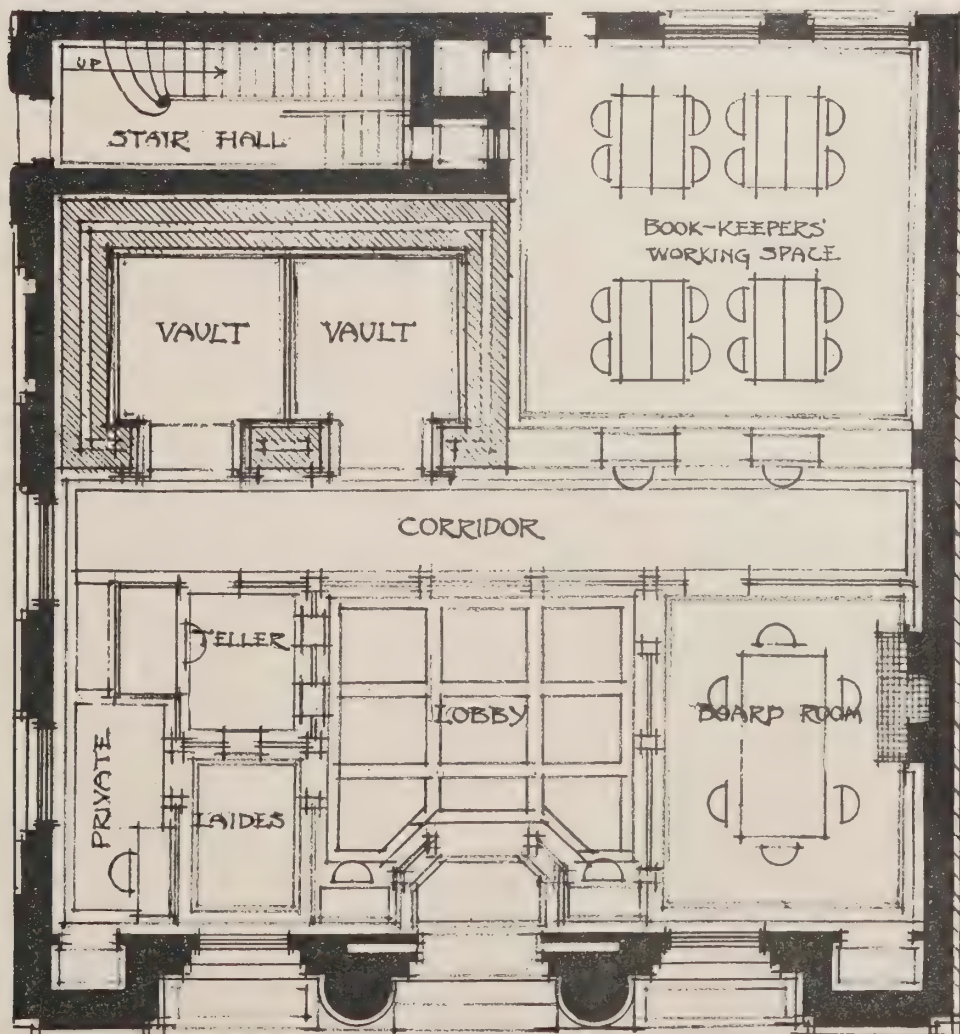


FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

HOUSE AT WASHINGTON, D. C.
WYETH & CRESSON, ARCHITECTS.



FLOOR PLAN.

BANK AT ALEXANDRIA, VA.
WOOD, DONN & DEMING, ARCHITECTS.



FRONT OF THE GROUP.



ADMINISTRATION BUILDING THROUGH THE GATEWAY.

THE WIDENER MEMORIAL INDUSTRIAL TRAINING SCHOOL, LOGAN STATION, PHILADELPHIA.
HORACE TRUMBAUER, ARCHITECT.

THE BRICKBUILDER,
OCTOBER,
1905.





SHOWING SIDE VIEW OF GROUP AND ADMINISTRATION BUILDING.



REAR VIEW OF GROUP AND ADMINISTRATION BUILDING.

THE WIDENER MEMORIAL INDUSTRIAL TRAINING SCHOOL, LOGAN STATION PHILADELPHIA.

HORACE TRUMBAUER, ARCHITECT.





HOUSE, WASHINGTON, D. C.
WYETH & CRESSON, ARCHITECTS.





HOUSE FOR ROBERT PITCAIRN, JR., ESQ., PITTSBURG, PA.
MACCLURE & SPAHR, ARCHITECTS.





BANK BUILDING, ALEXANDRIA, VA.
WOOD, DONN & DEMING, ARCHITECTS.

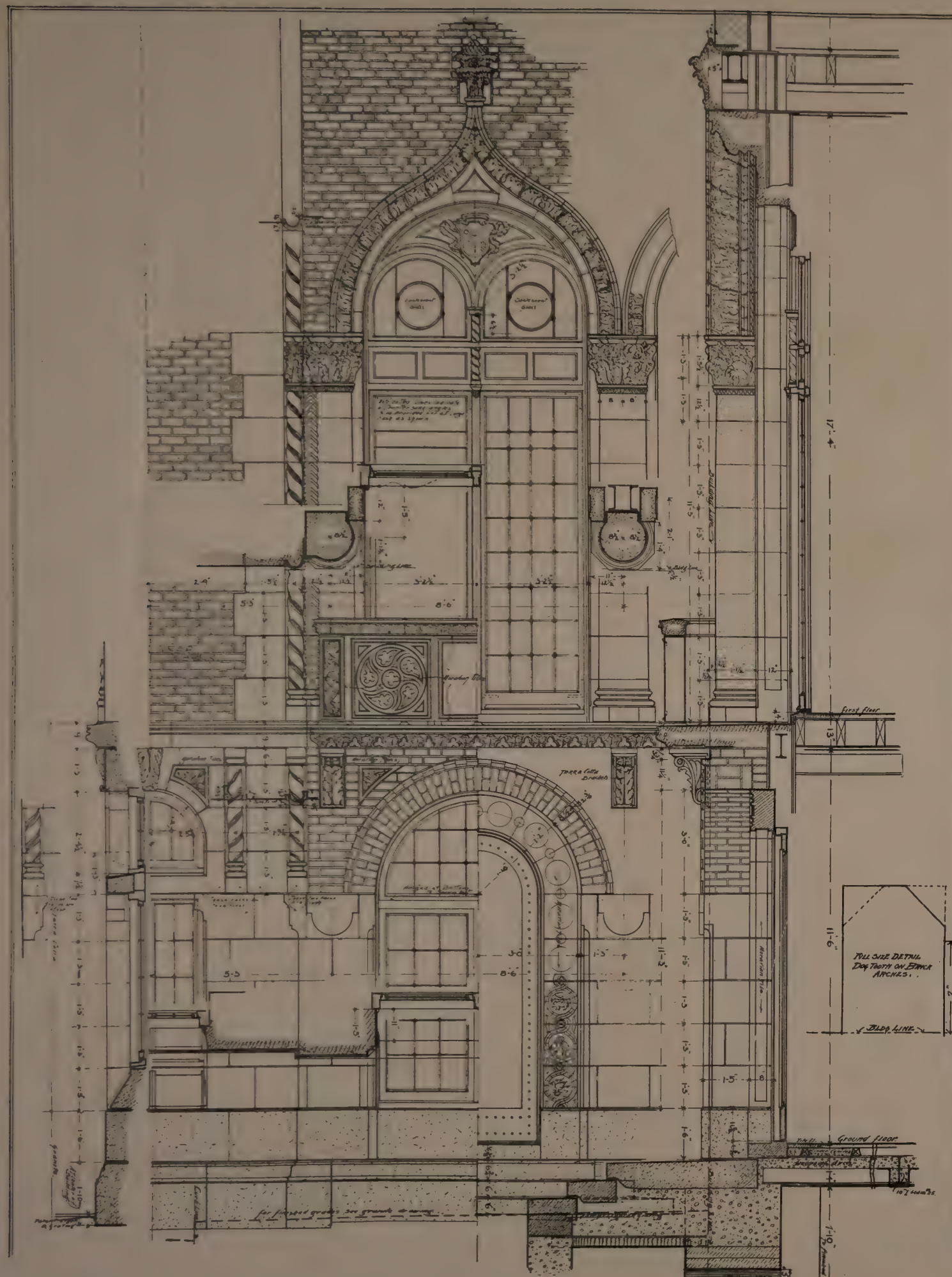


DETAIL OF ADMINISTRATION BUILDING AND RIGHT WING.

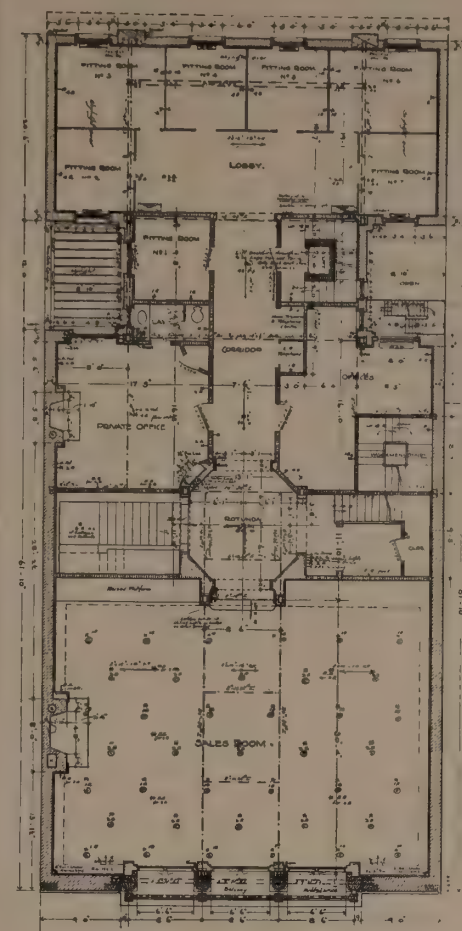


DETAIL OF ADMINISTRATION BUILDING AND LEFT WING.

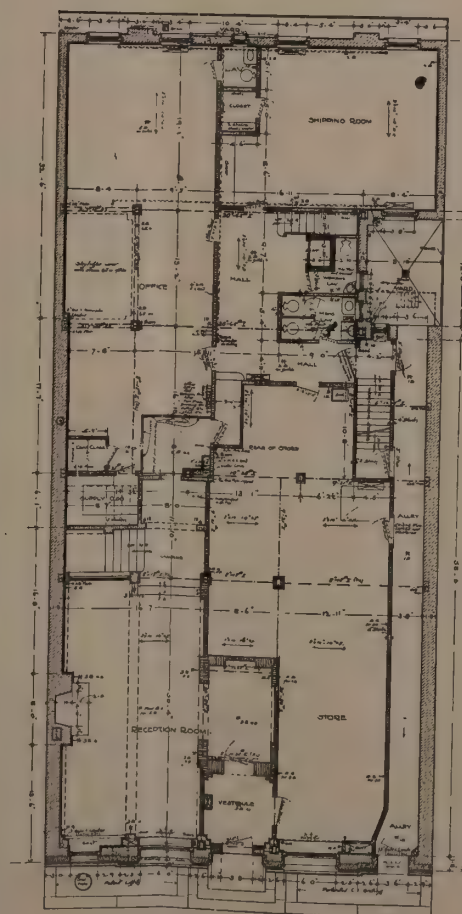
THE WIDENER MEMORIAL INDUSTRIAL TRAINING SCHOOL, LOGAN STATION, PHILADELPHIA.
HORACE TRUMBAUER, ARCHITECT.



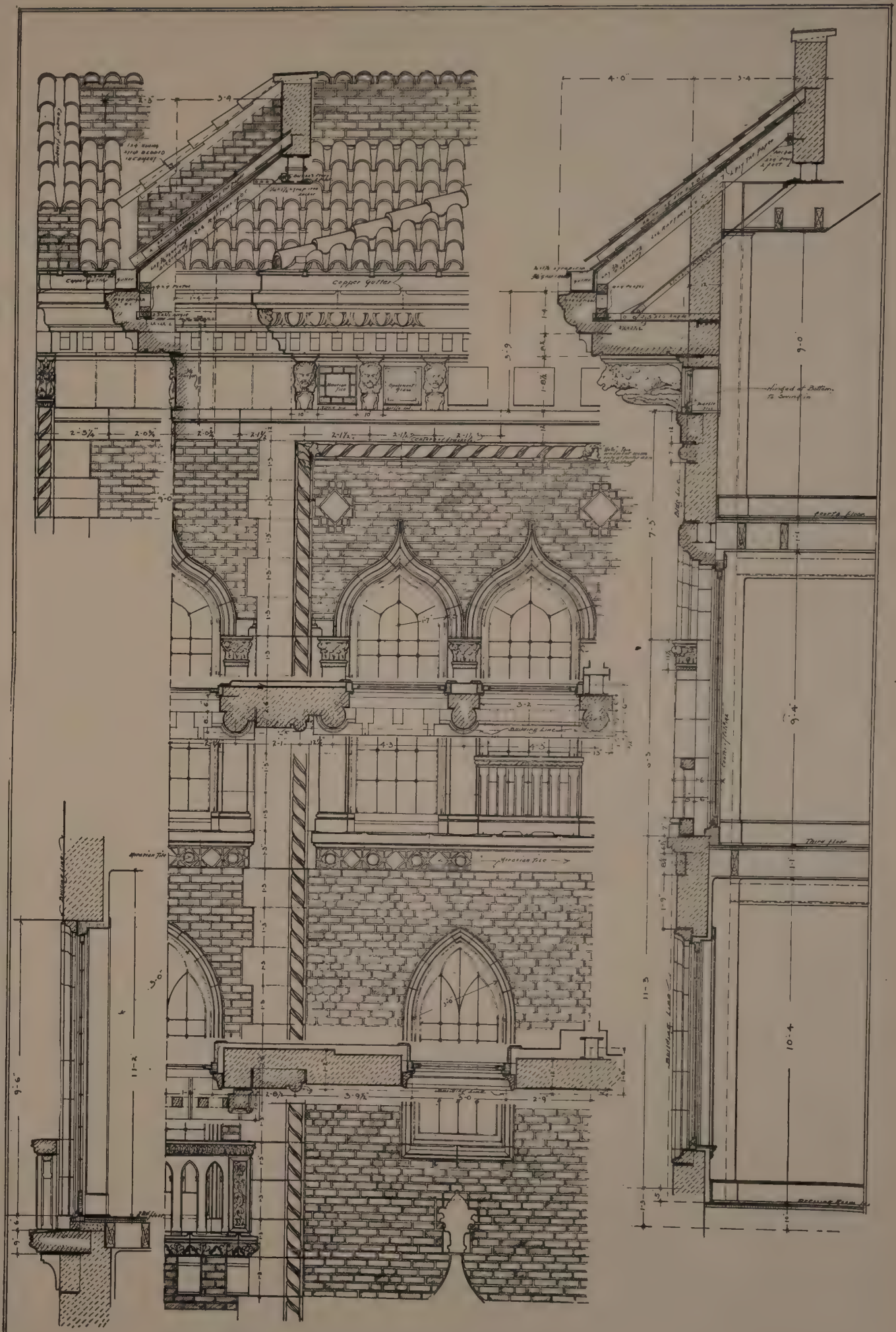
DETAIL OF ELEVATION, GROUND AND FIRST STORIES.



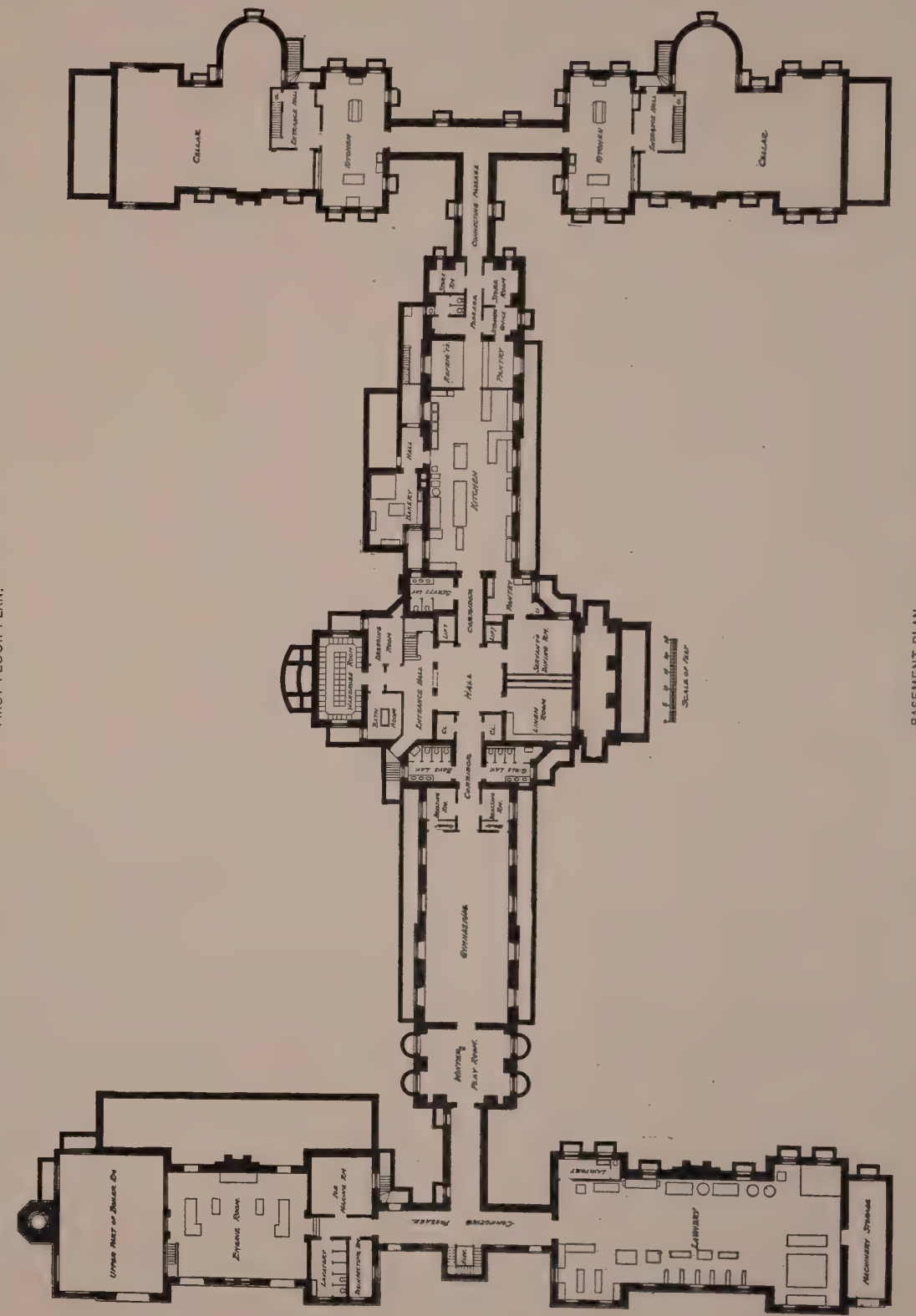
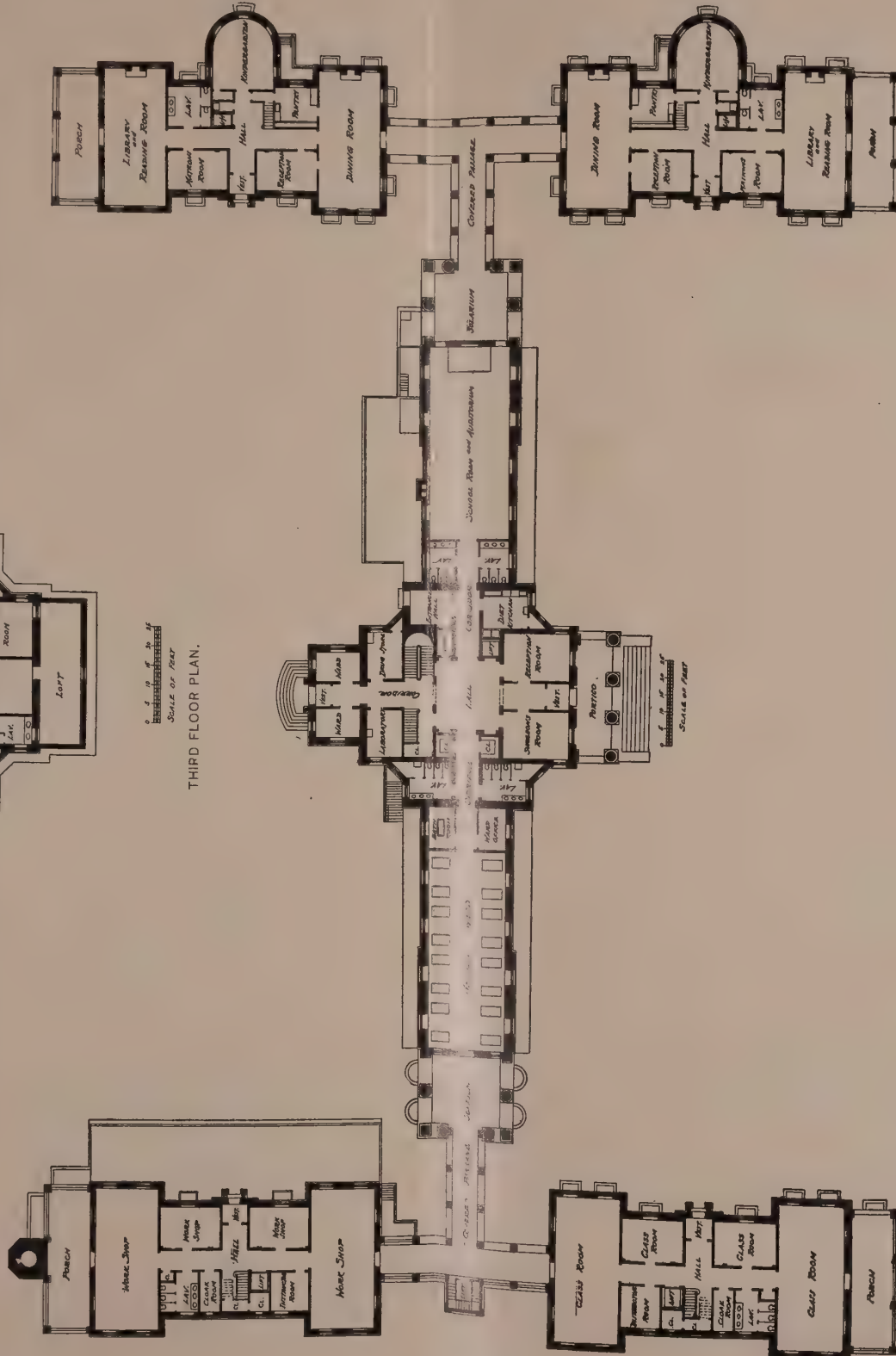
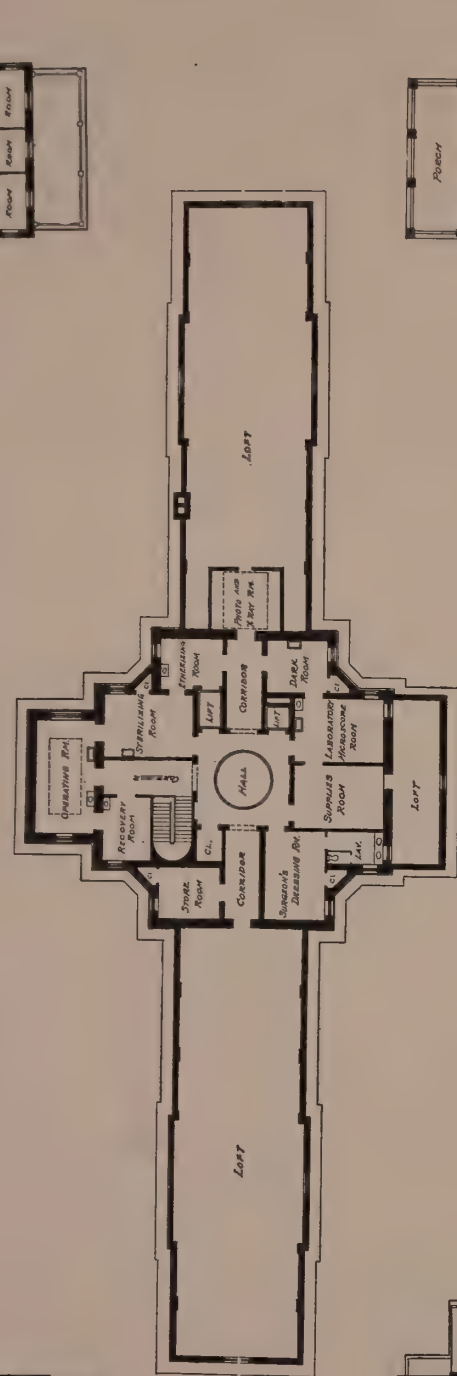
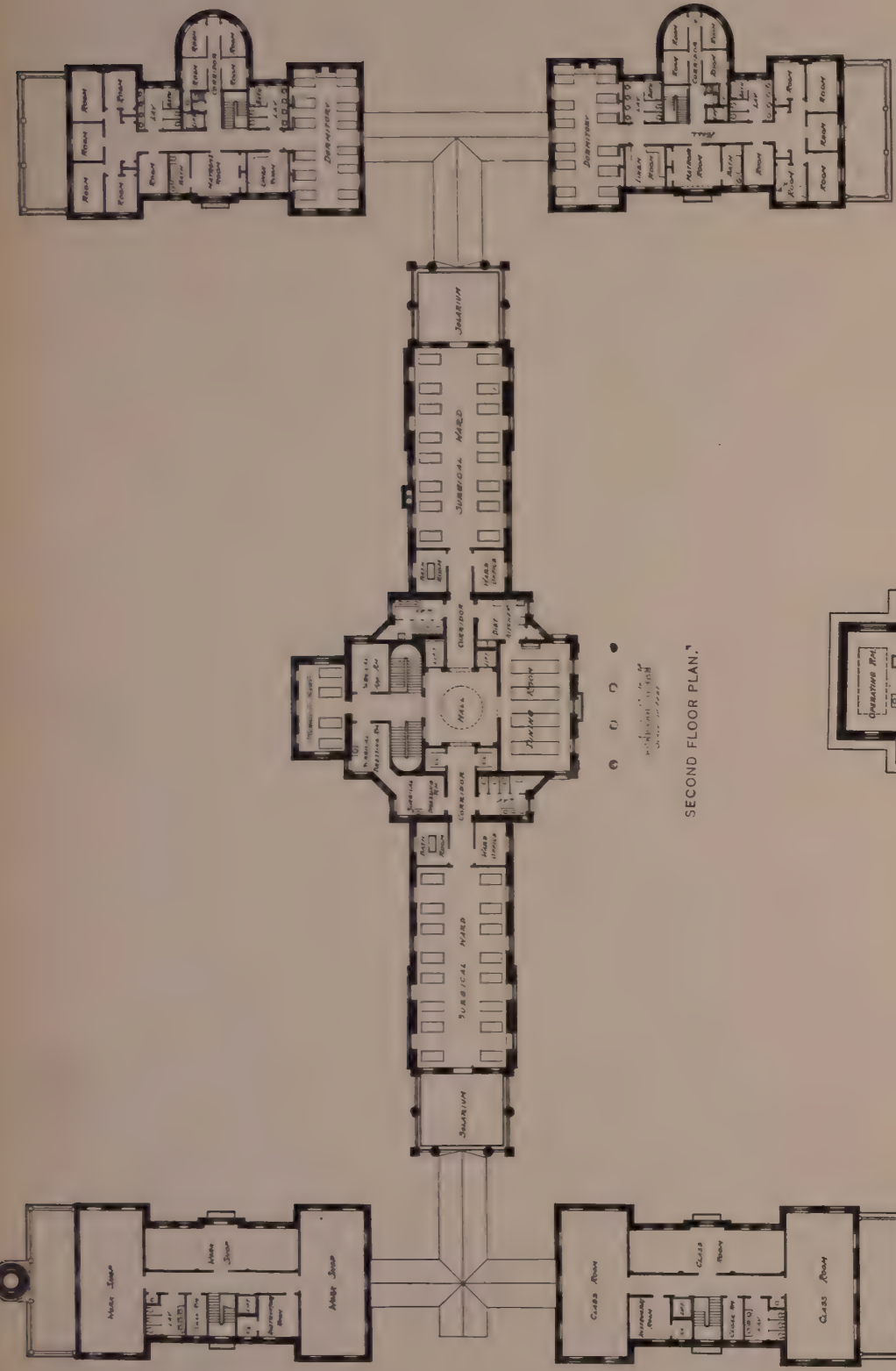
SECOND FLOOR PLAN.

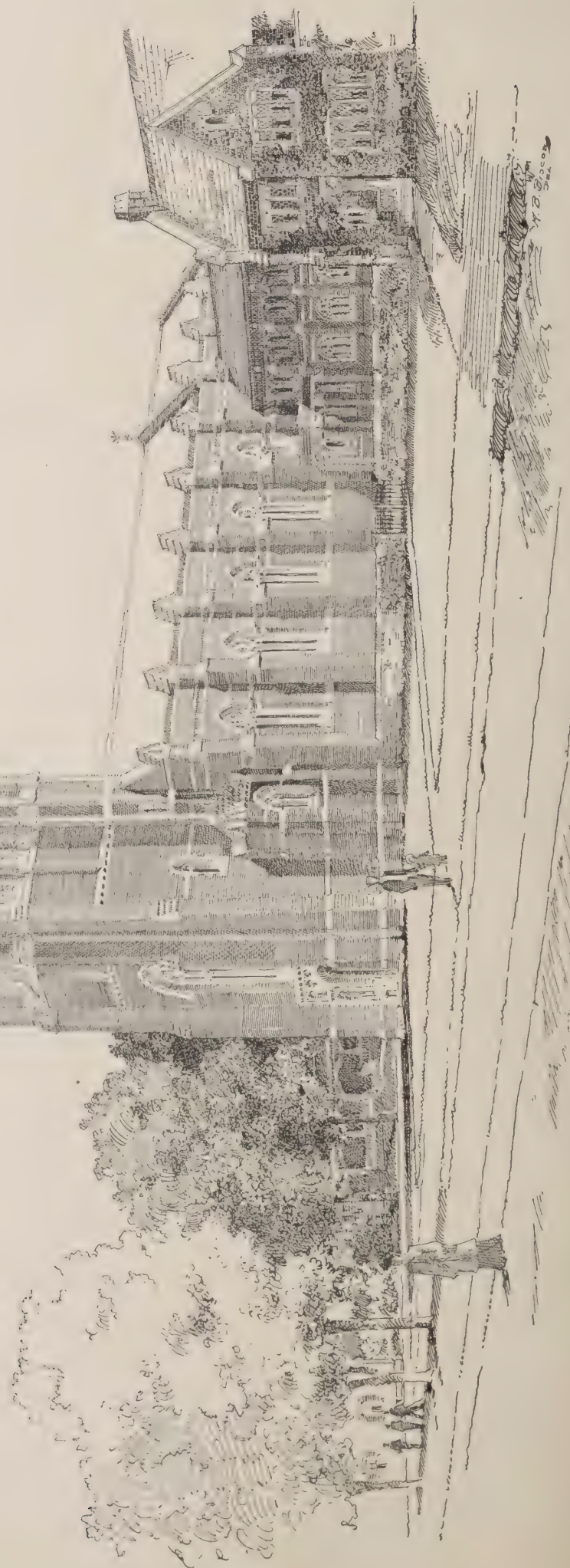
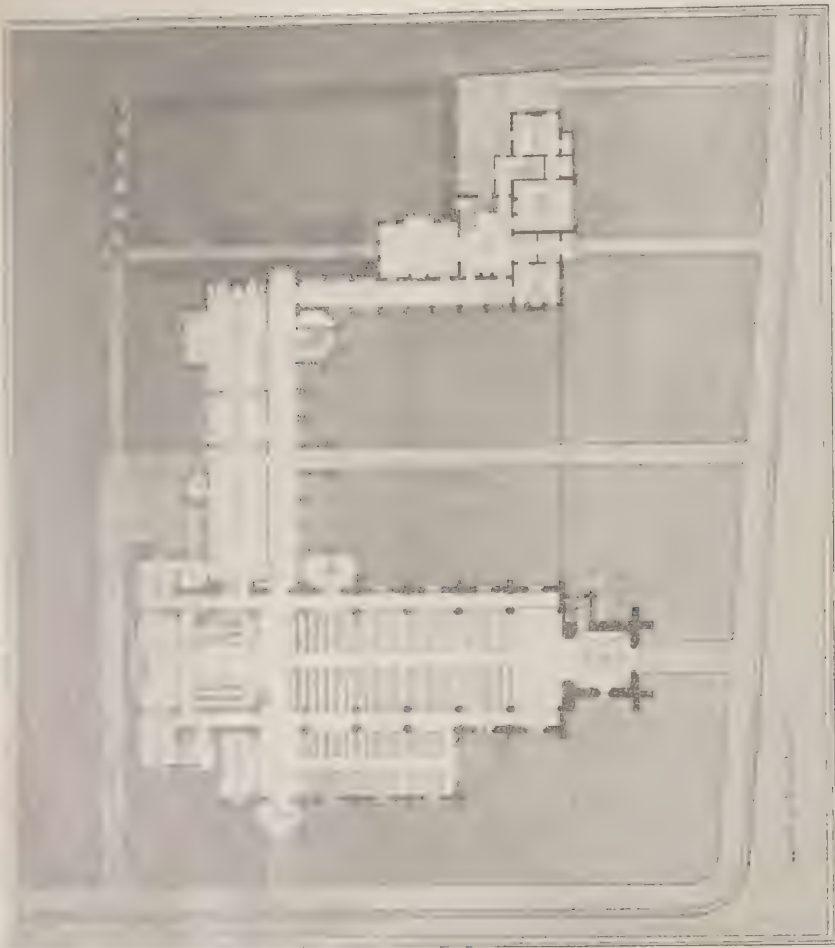


FIRST FLOOR PLAN.



DETAIL OF ELEVATION, SECOND, THIRD AND FOURTH STORIES.





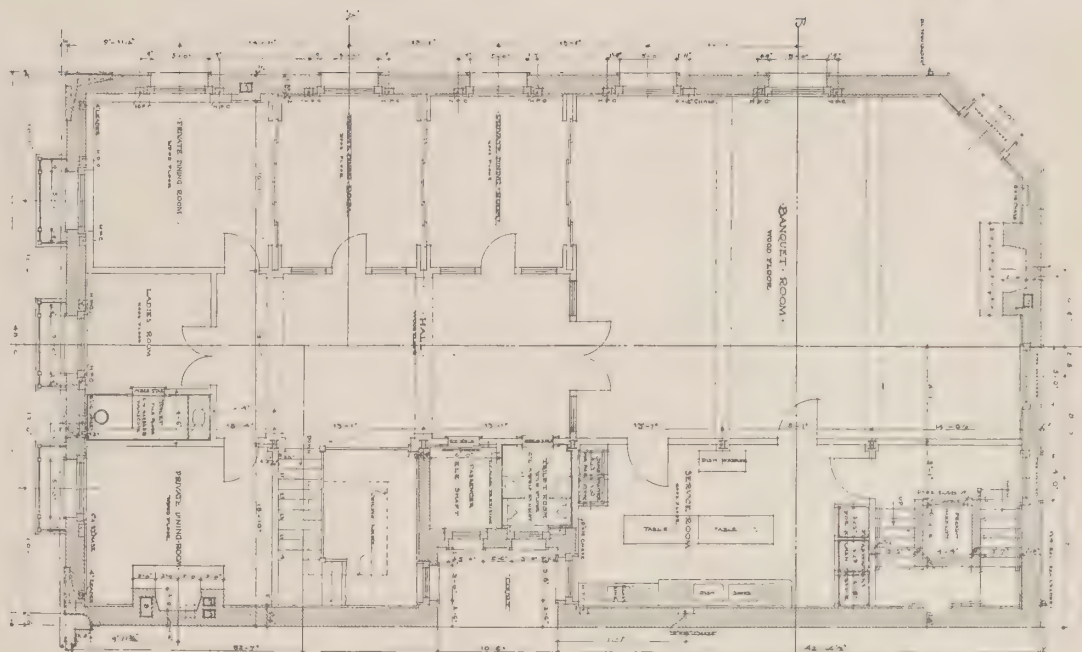
WARREN, SMITH & BISCOE, ARCHITECTS.

CHURCH OF THE EPIPHANY, WINCHESTER, MASS.

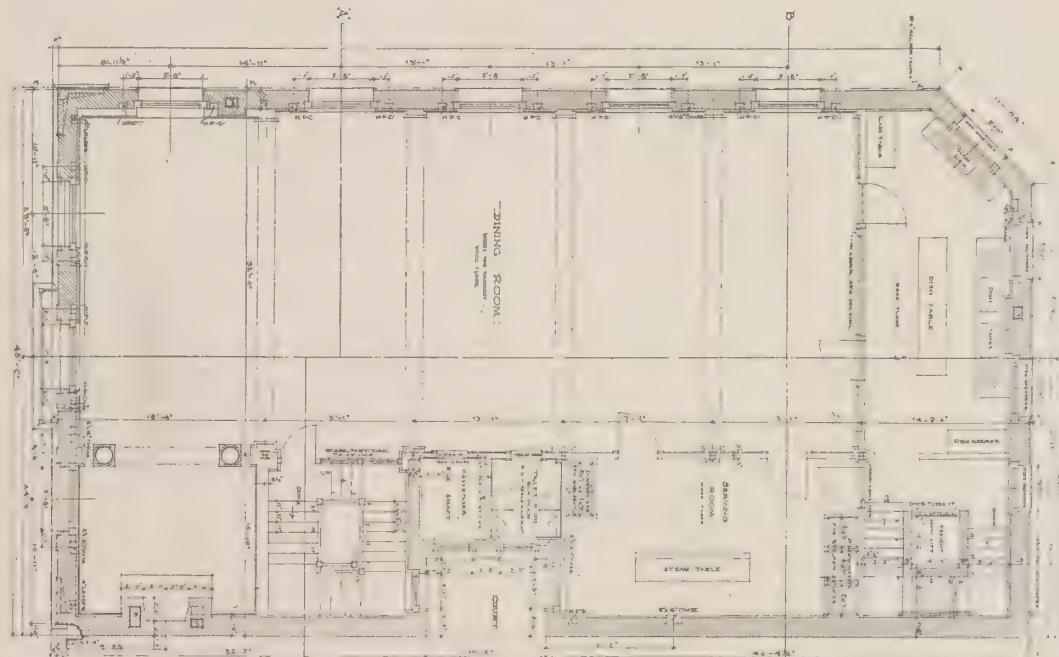
(AS IT WILL APPEAR WHEN COMPLETED.)



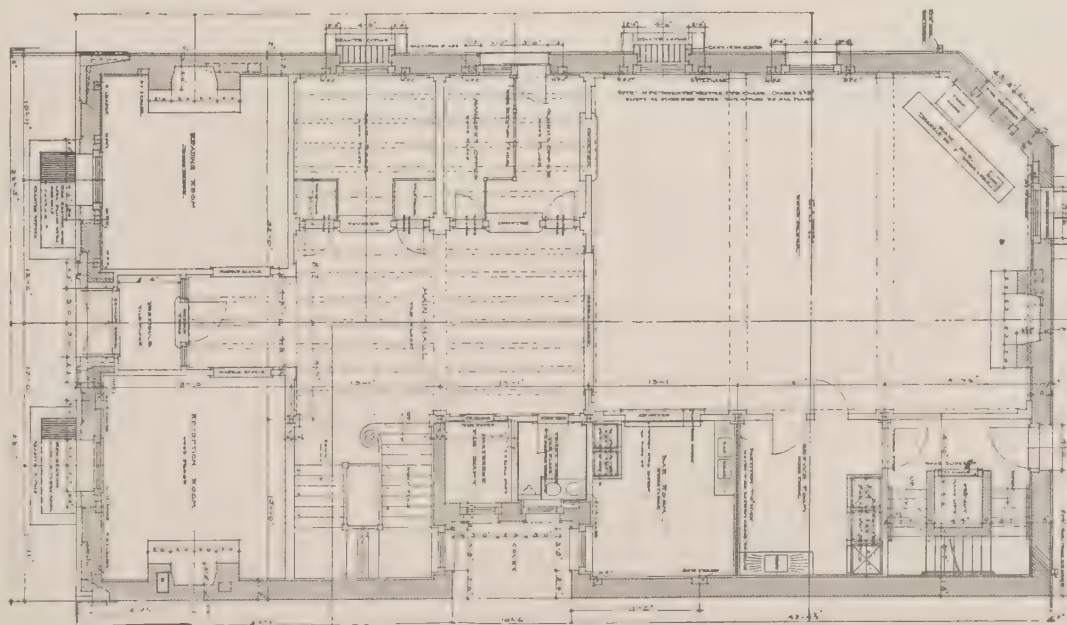
HALF FRONT ELEVATION.



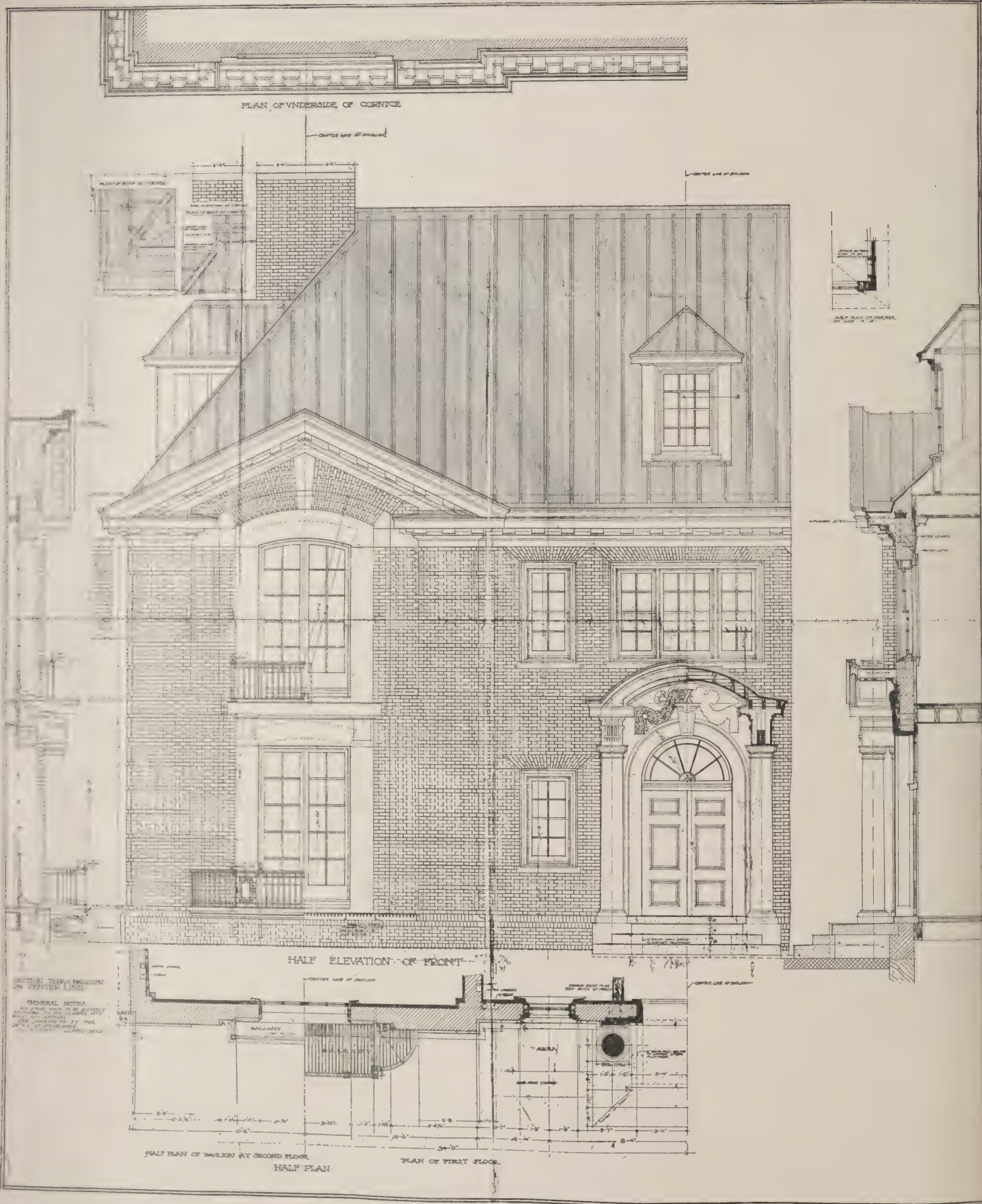
THIRD FLOOR PLAN.



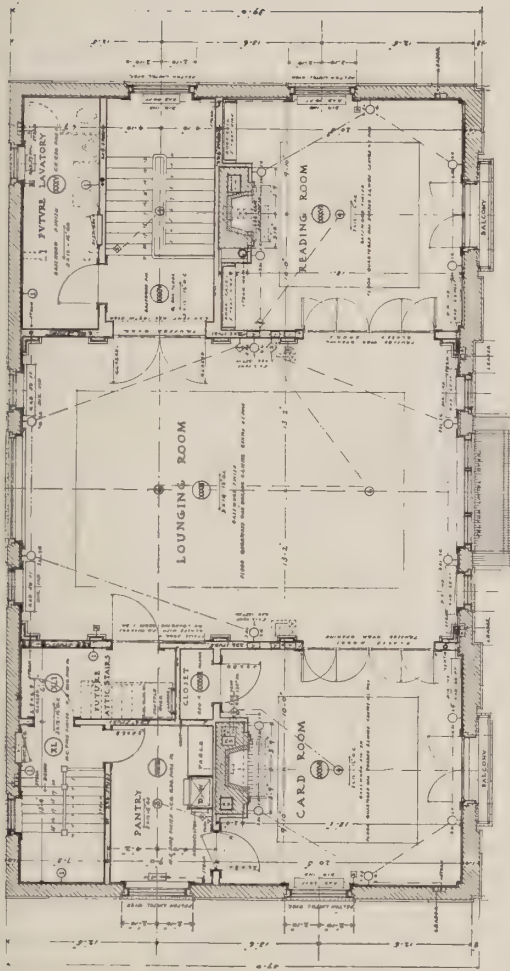
SECOND FLOOR PLAN.



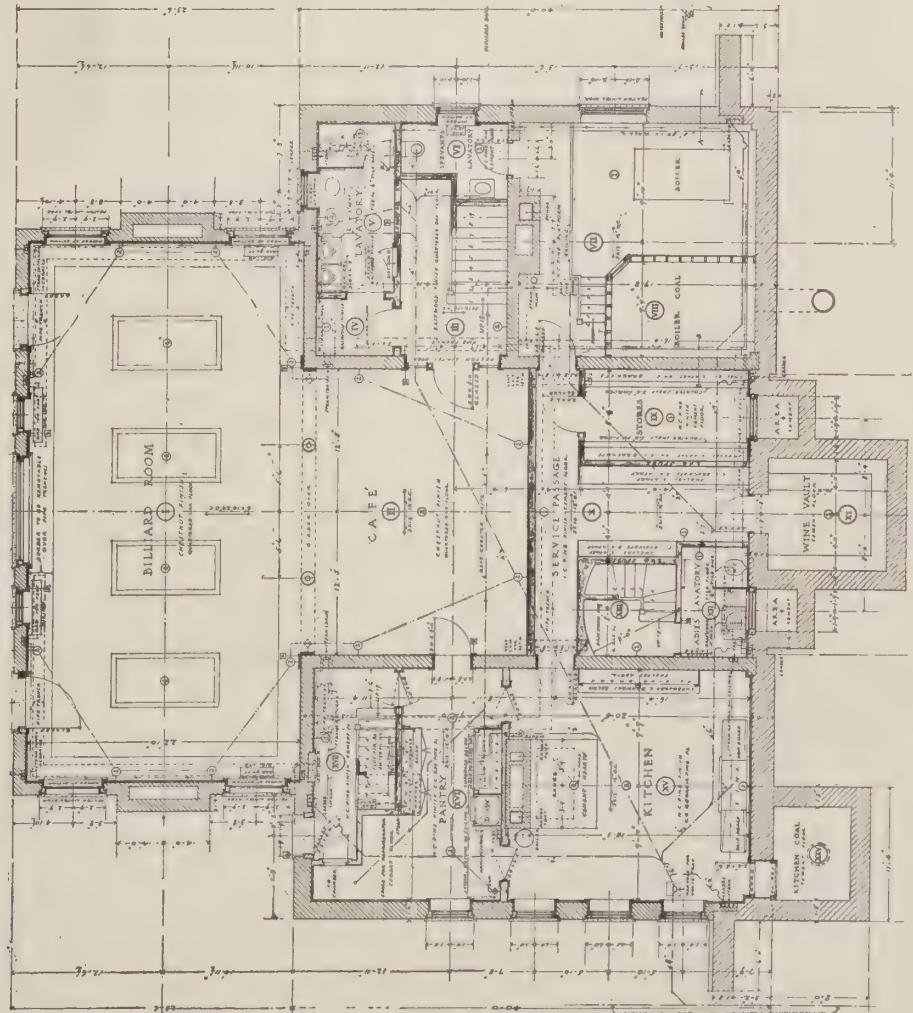
FIRST FLOOR PLAN.



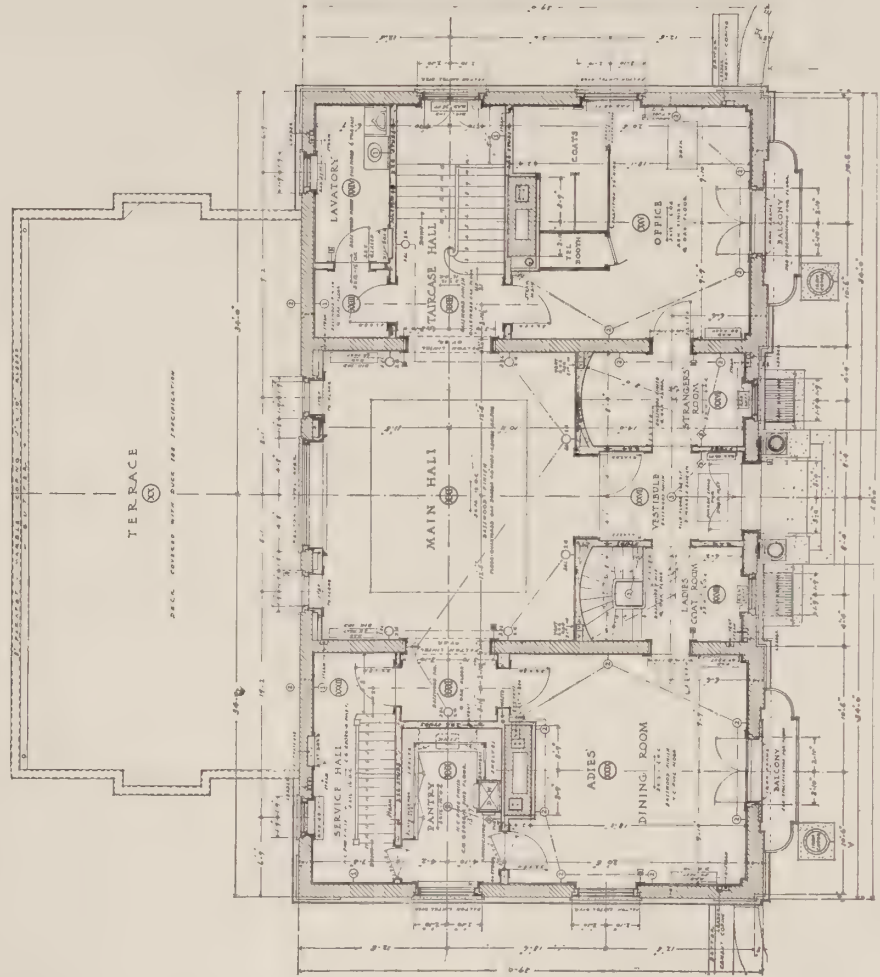
DETAIL OF THE FRONT ELEVATION.
THE CITY CLUB, AUBURN, N. Y.
WILKINSON & MAGONIGLE, ARCHITECTS.



SECOND FLOOR PLAN.



BASEMENT PLAN.



FIRST FLOOR PLAN.



THE BERKELEY PUBLIC LIBRARY, BERKELEY, CAL.

JOHN GALEN HOWARD, ARCHITECT.



THE BRICKBUILDER,
NOVEMBER,
1905.

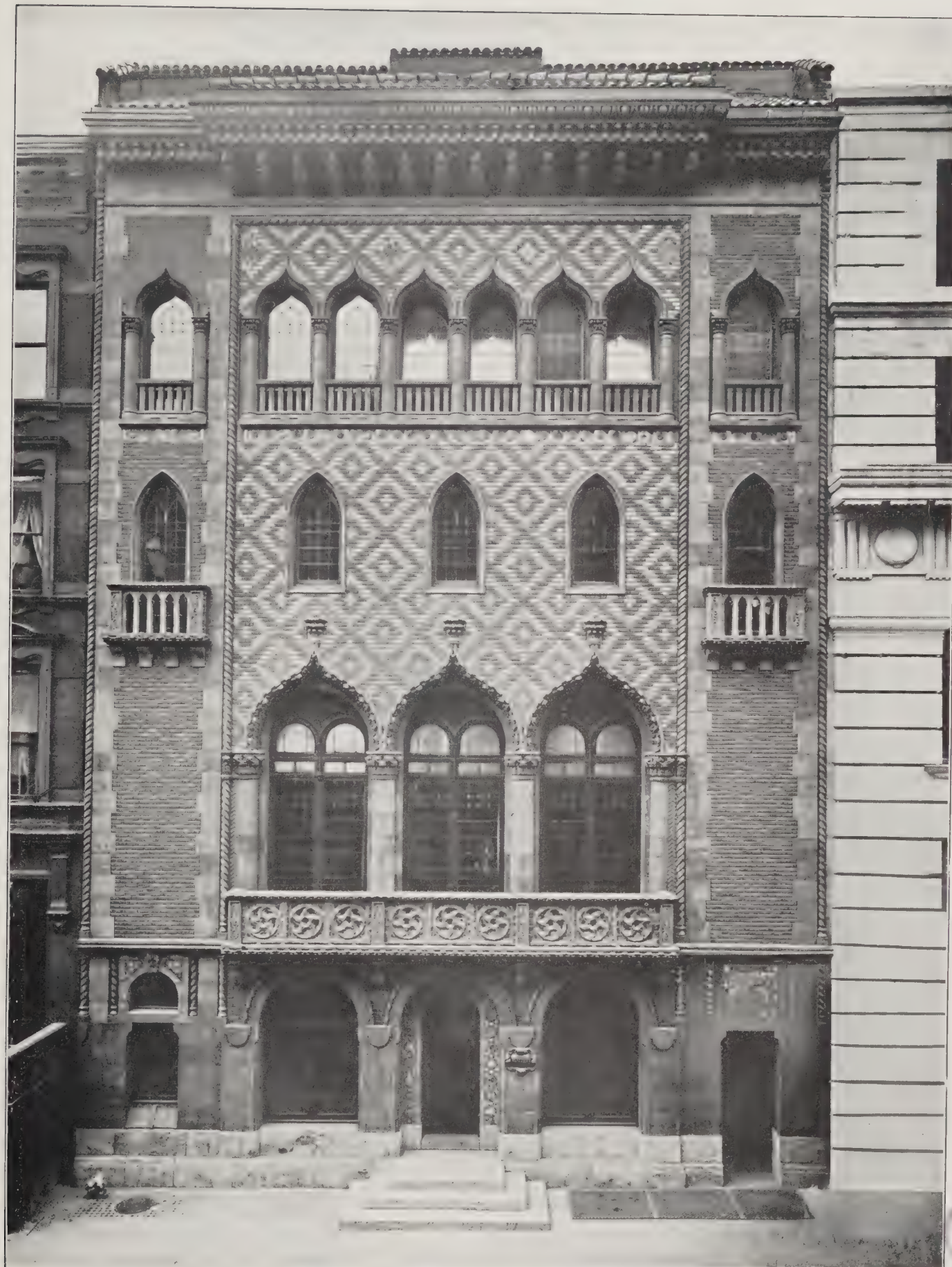


THE CITY CLUB, AUBURN, N. Y.
WILKINSON & MAGONIGLE, ARCHITECTS.





THE MERCHANTS CLUB, BALTIMORE, MD.
SPERRY, YORK & SAWYER, ARCHITECTS.



THE WETZEL BUILDING, EAST 44TH STREET, NEW YORK CITY.
 (A TAILORING ESTABLISHMENT.)
 HILL & STOUT, ARCHITECTS.



THE BERKELEY PUBLIC LIBRARY, BERKELEY, CAL.
JOHN GALEN HOWARD, ARCHITECT.

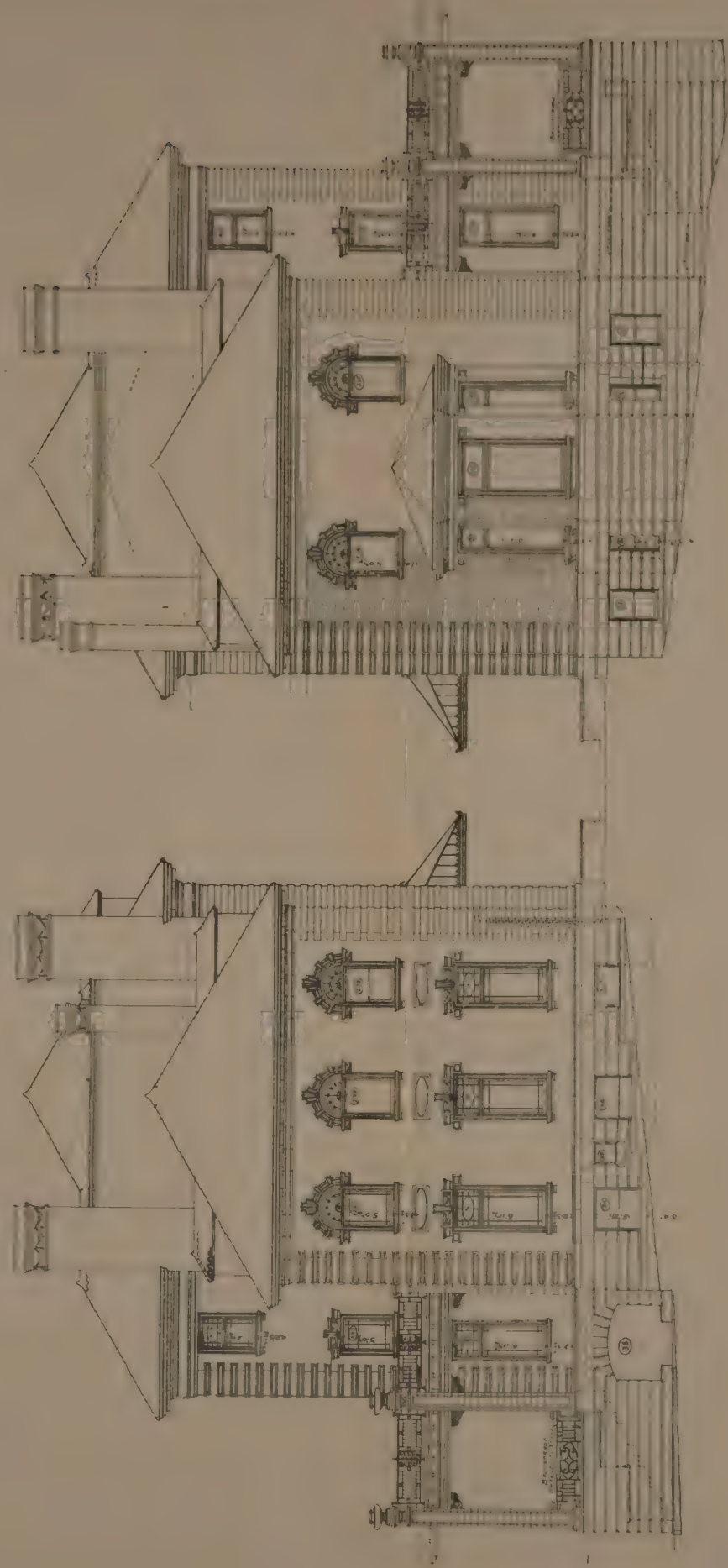


THE FINISHED PORTION OF THE CHURCH OF THE EPIPHANY WINCHESTER, MASS.
WARREN, SMITH & BISCOE, ARCHITECTS.



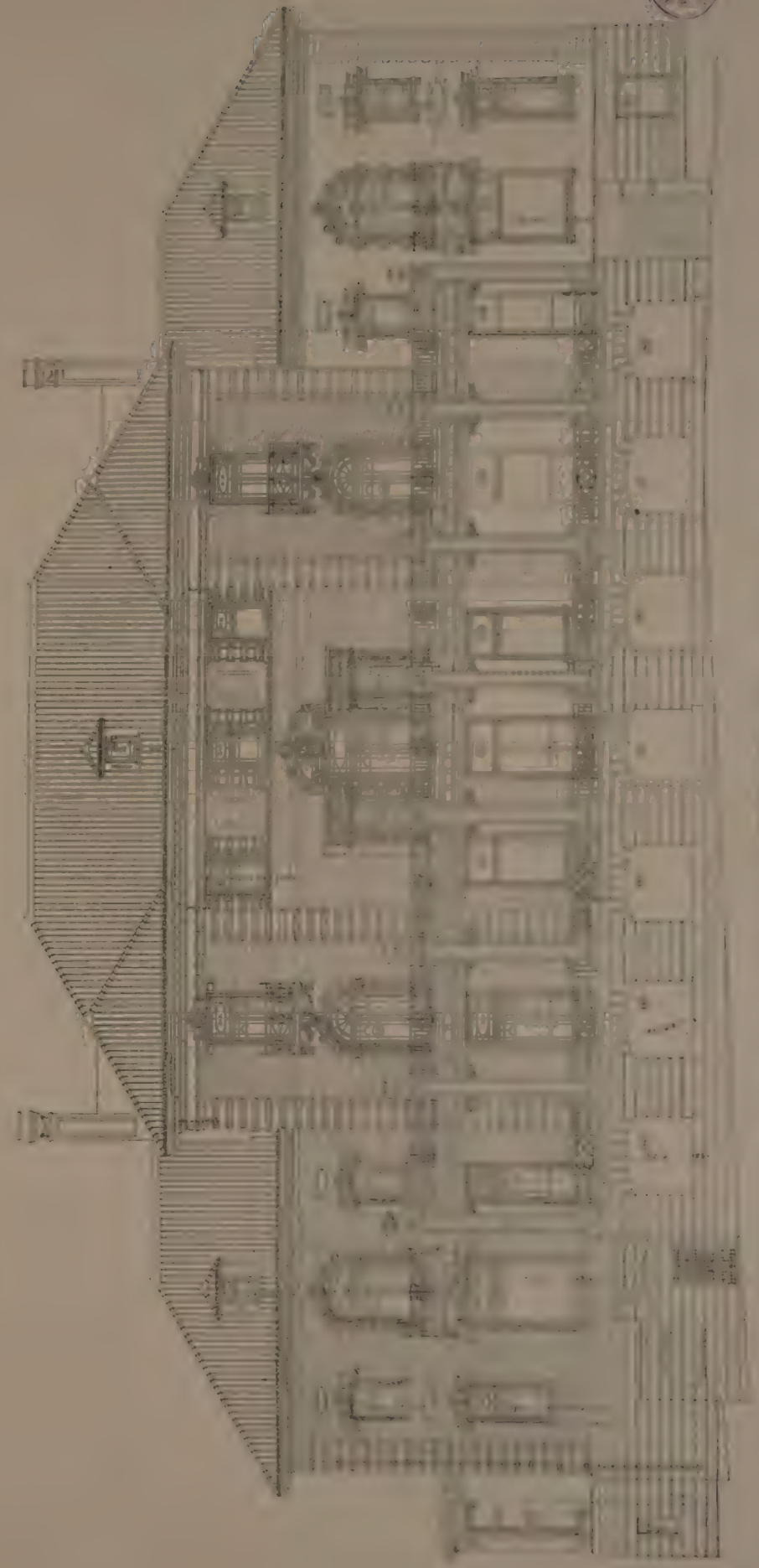


EAST ELEVATION.



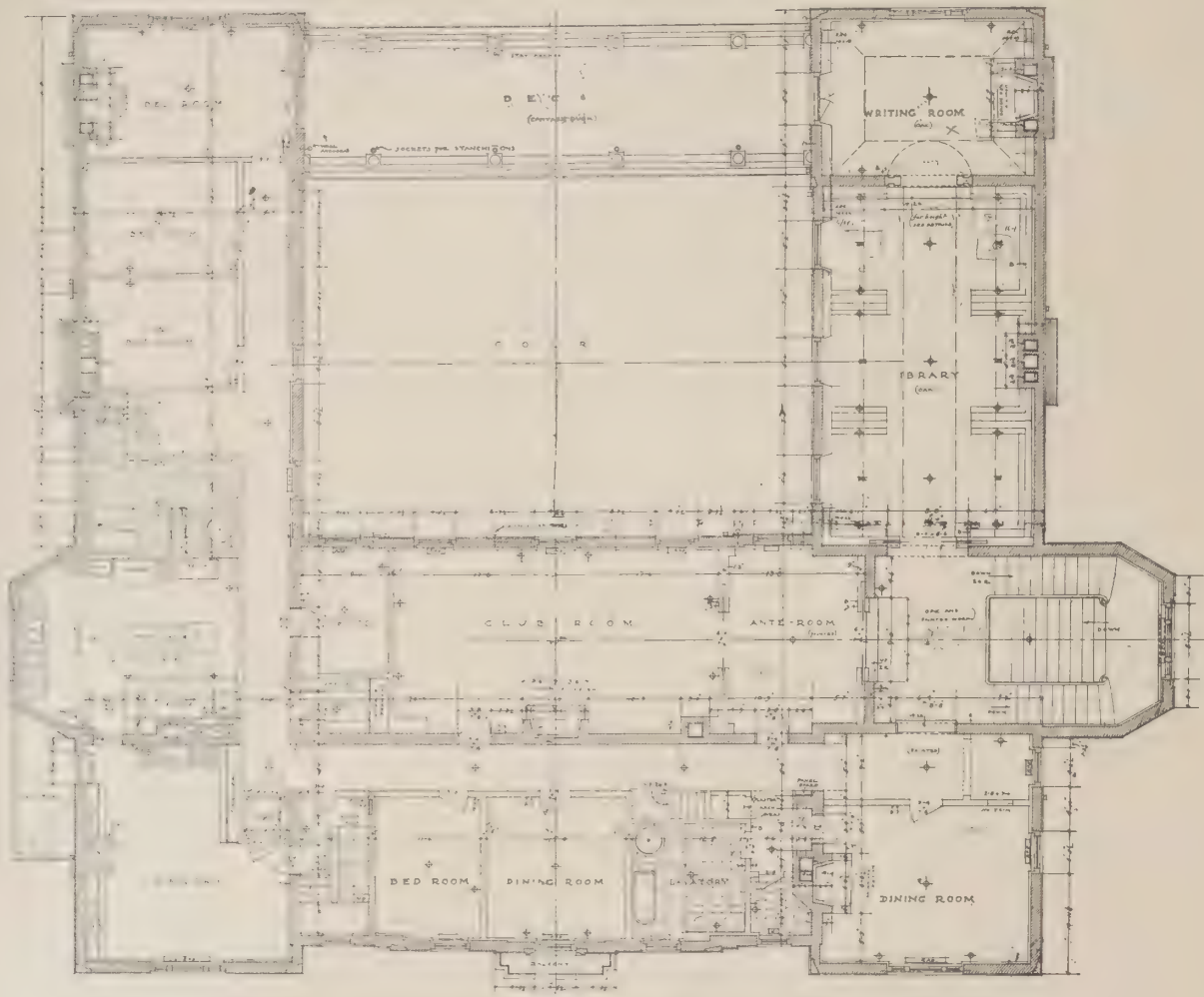
SOUTH ELEVATION.

NORTH ELEVATION.

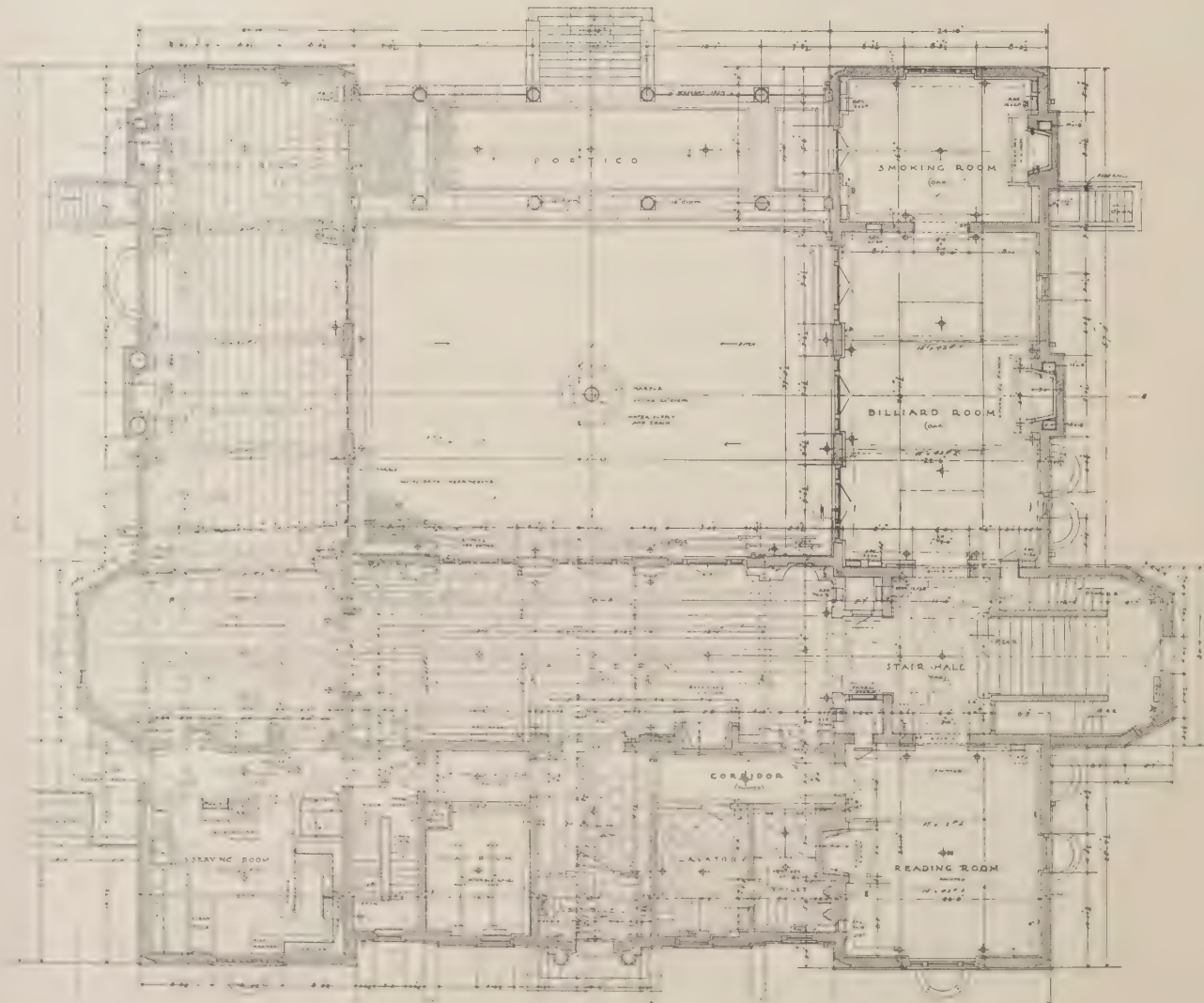


ELEVATIONS HOUSE FOR F. H. HALSEY ESQ., TUESDAY PARK, N. Y.
DESIGNED BY J. C. SMITH.





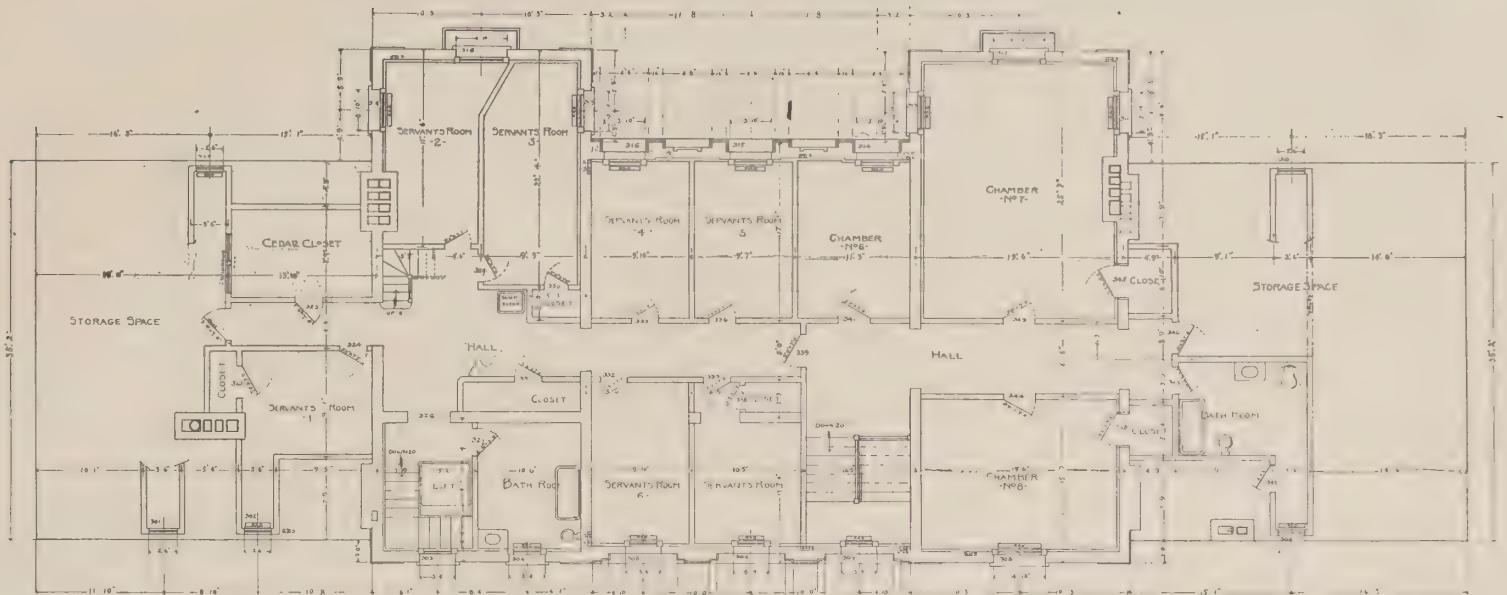
SECOND FLOOR PLAN.



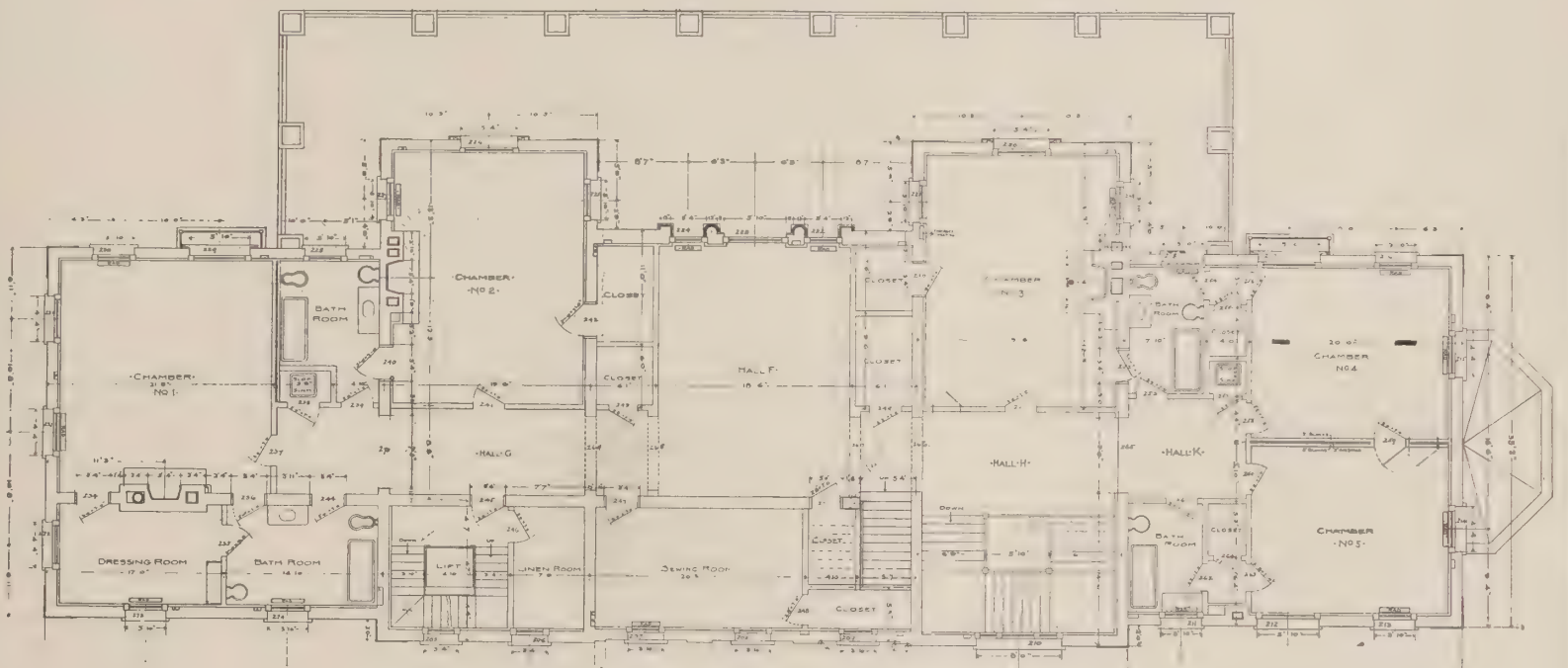
FIRST FLOOR PLAN.

FLOOR PLANS, THE COTTAGE CLUB, PRINCETON, N. J.
MCKIM, MEAD & WHITE, ARCHITECTS.

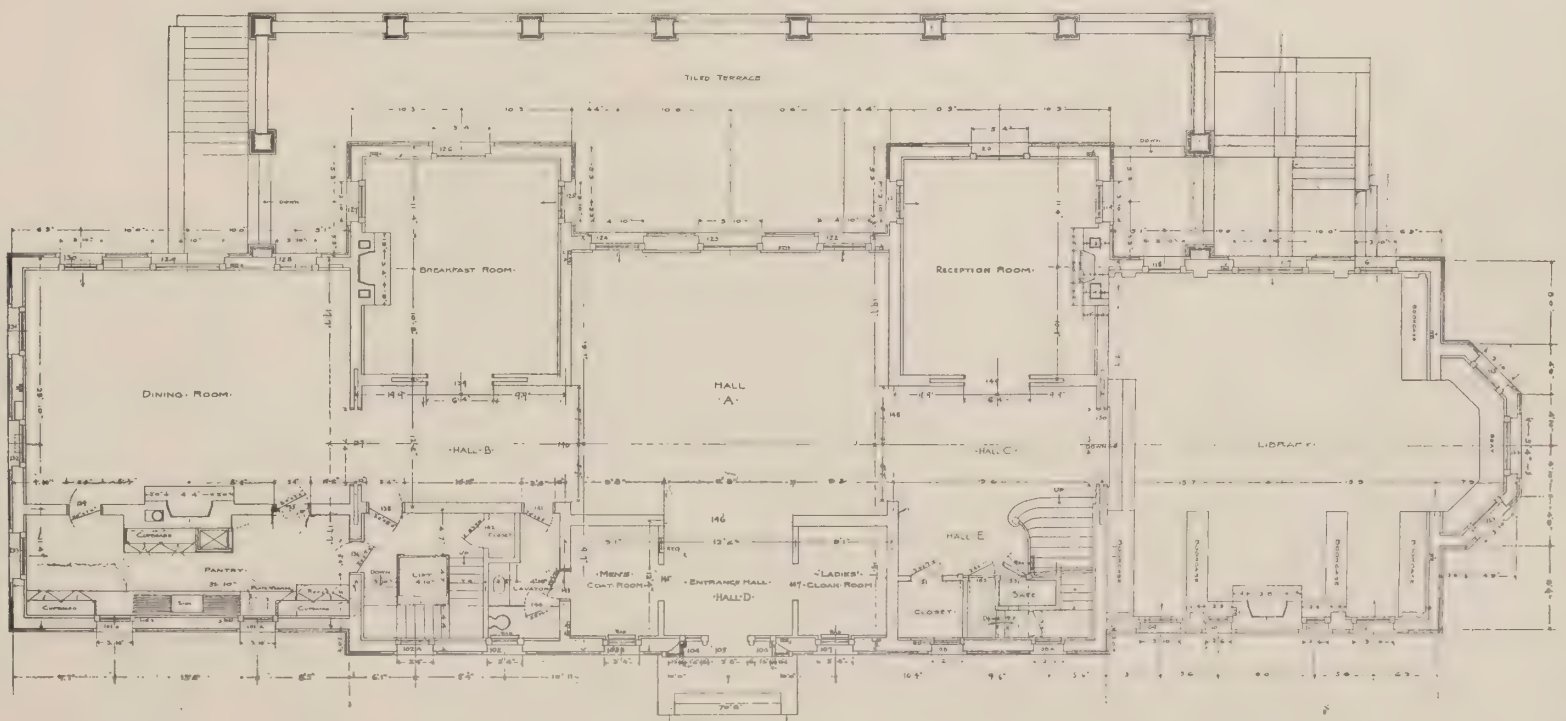




THIRD FLOOR PLAN.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

FLOOR PLANS, HOUSE FOR F. R. HALSEY, ESQ., TUXEDO PARK, N. Y.
BRUCE PRICE, ARCHITECT.

BOSTON
PUBLISHED



UNITARIAN CHURCH, PETERBORO STREET, BOSTON.
PURDON & LITTLE, ARCHITECTS.





YOUNG MEN'S CHRISTIAN ASSOCIATION BUILDING, UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE, VA.
PARISH & SCHROEDER, ARCHITECTS.





HOUSE FOR F. R. HALSEY, ESQ., TUXEDO PARK, N. Y.
BRUCE PRICE, ARCHITECT.



WOMEN'S BUILDING, UNIVERSITY OF ILLINOIS, URBANA, ILL.

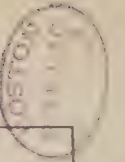
MCKIM, MEAD & WHITE, ARCHITECTS.



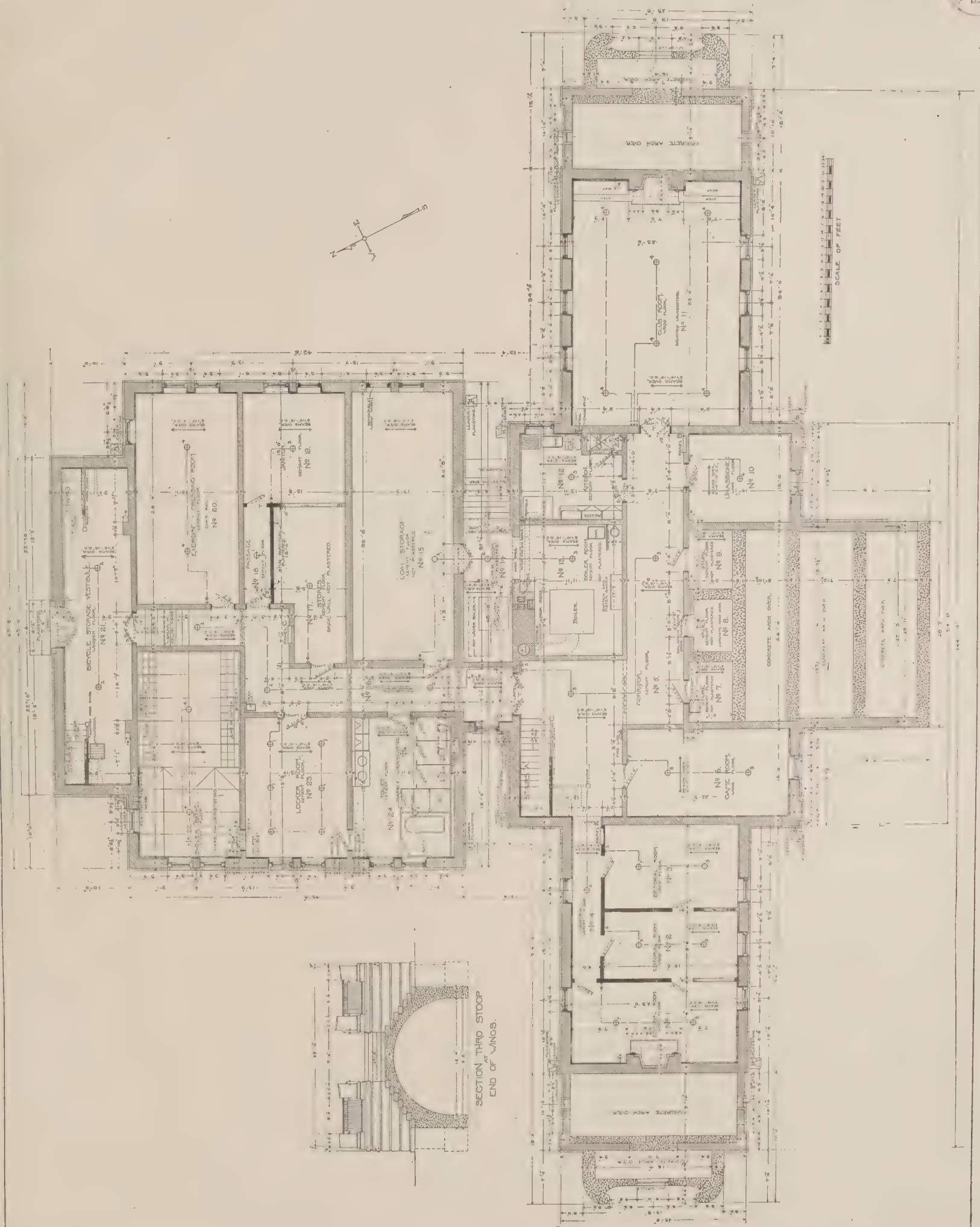


VIEWS OF THE FRONT, COTTAGE CLUB, PRINCETON, N. J.
MCKIM, MEAD & WHITE, ARCHITECTS.



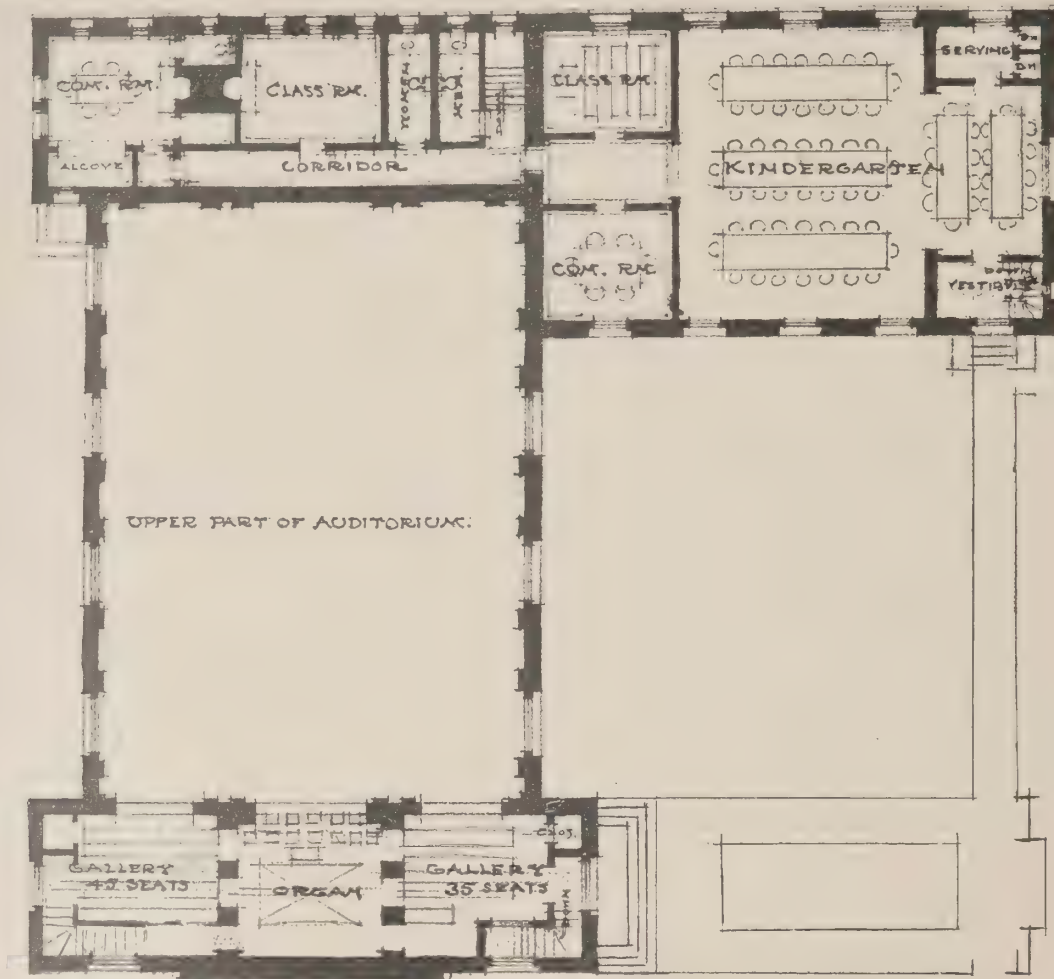


ARTHUR & CHROSLER, PROJECTS.

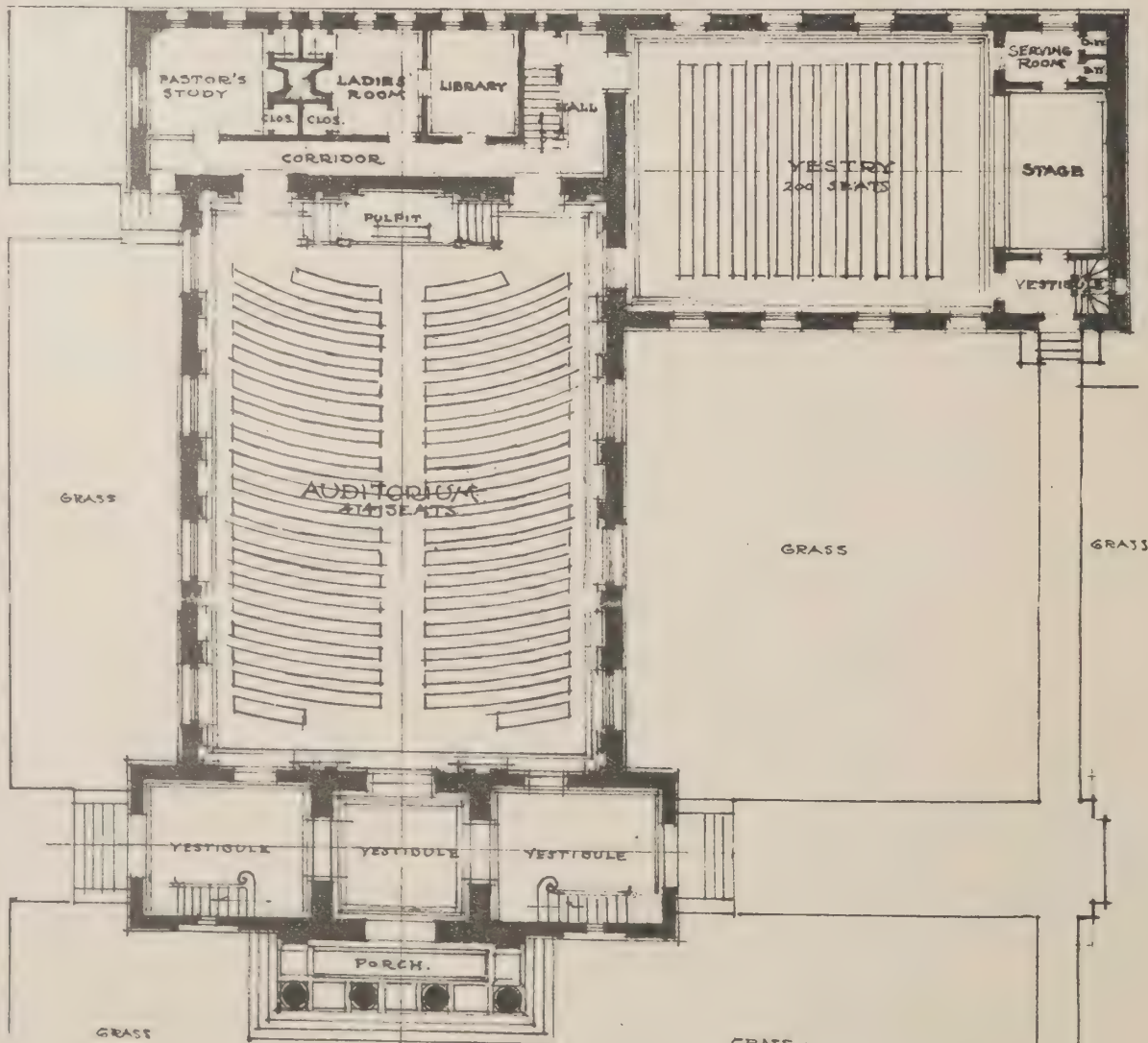


BASEMENT PLAN, Y. M. C. A. BUILDING, UNIVERSITY OF VIRGINIA, CHARLOTTESVILLE, VA.

FAPISH & SCHROEDER, ARCHITECTS.



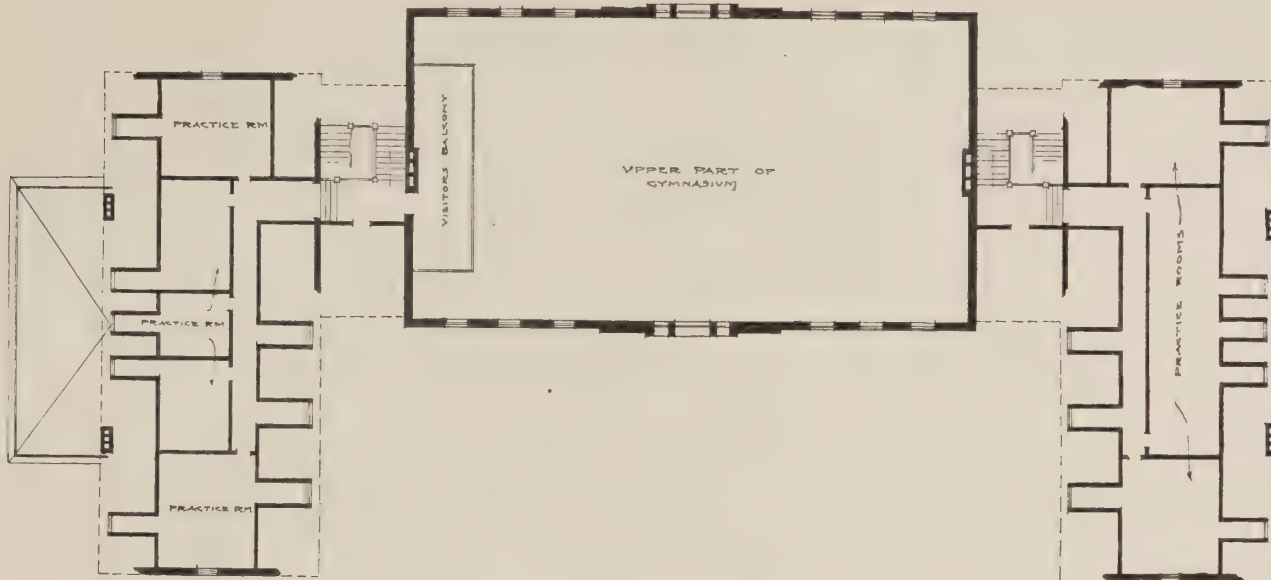
SECOND FLOOR PLAN.



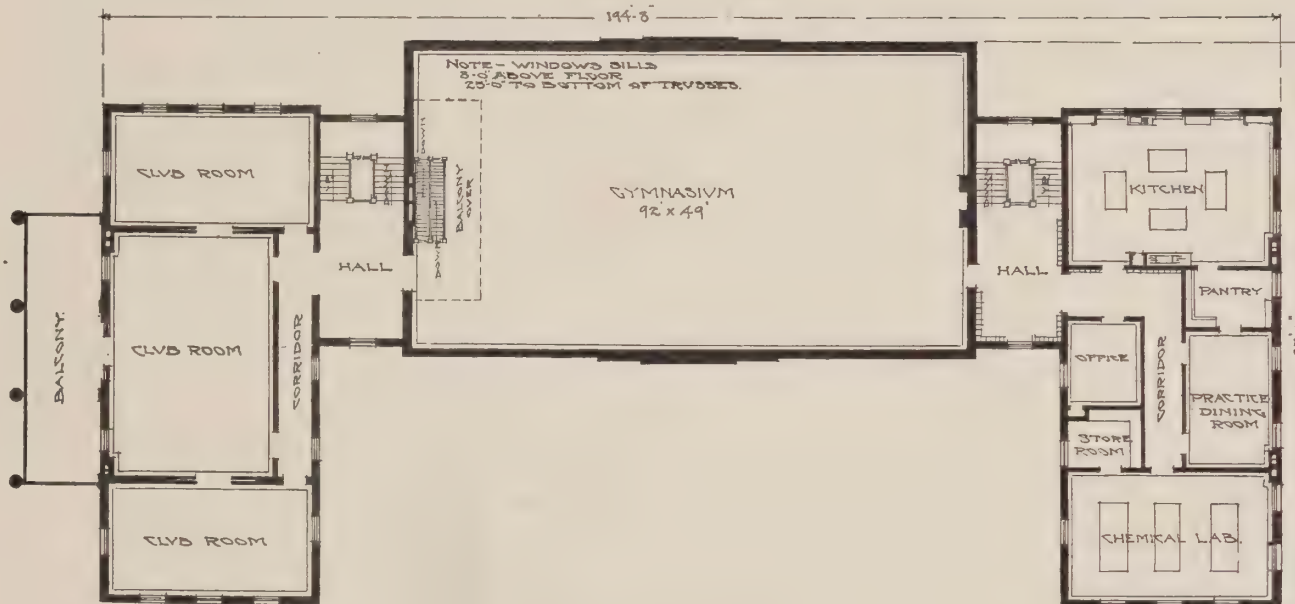
FIRST FLOOR PLAN.

PLANS, UNITARIAN CHURCH, BOSTON, MASS. PURDON & LITTLE, ARCHITECTS.

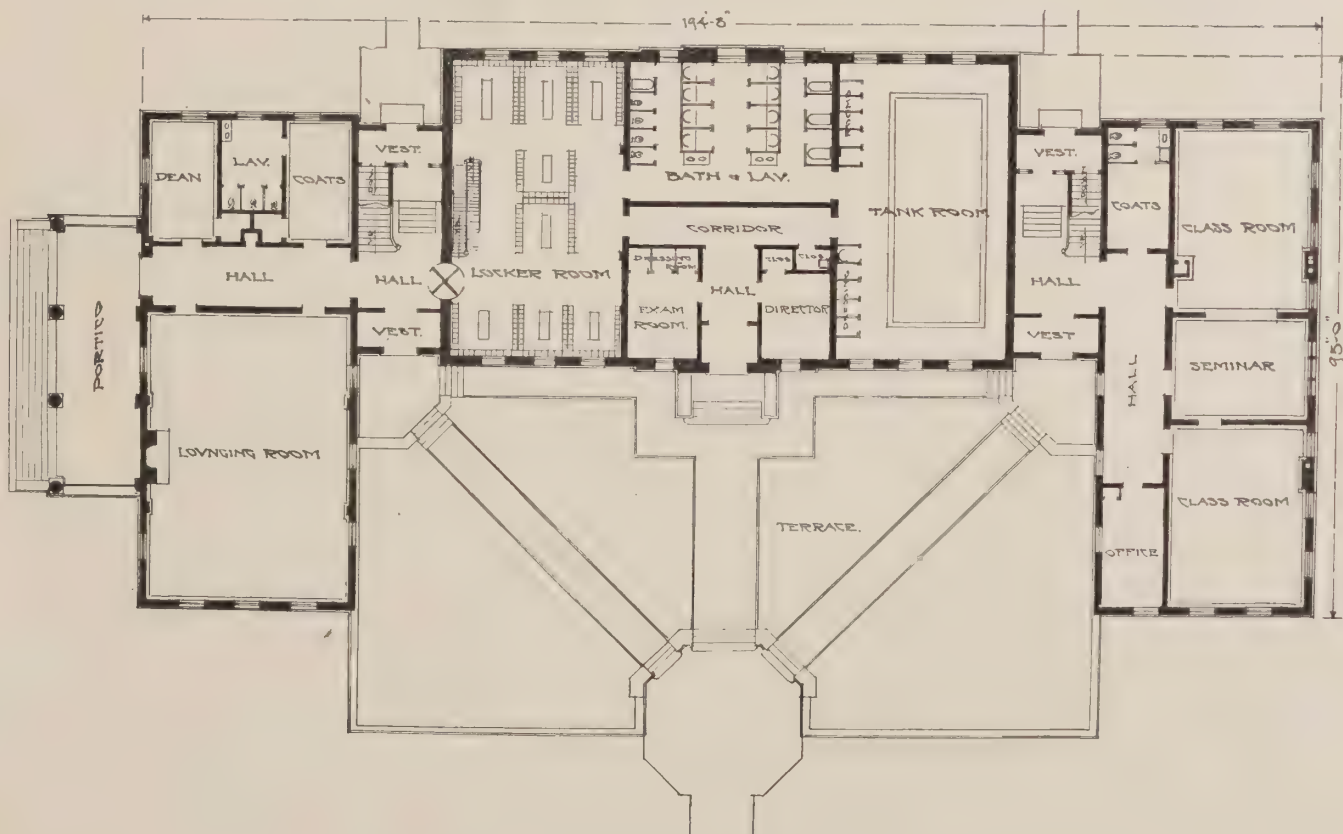




THIRD FLOOR PLAN.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.



VIEWS OF THE REAR AND TERRACE, COTTAGE CLUB, PRINCETON, N. J.
MCKIM, MEAD & WHITE, ARCHITECTS.

APR 30 1906

APR 30 1906

